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ECONOMIC INDICATORS

NEIGHBOR ISLAND PROFILES

KAUAI COUNTY IN 1984

The economy of Kauai County in 1984 is finally returning to the level of normalcy that prevailed before the devastation of Hurricane Iwa. 1983 represented an abnormal year, when economic activity was dominated to a large degree by repair and reconstruction of the destruction left by the hurricane. The degree of reconstruction activity across the island showed the extent to which this once-in-a-lifetime disaster affected the economy of the county through the money that it brought into the county in the form of insurance payments, disaster relief, and other government grants-in-aid. Across the island, 523 housing units were totally destroyed, and 4,322 homes were damaged. The Governor's Ad Hoc Committee on the Economic Impact of Hurricane Iwa estimated the damage at $216 million, not including damage to crops of $17 million.

However, the statistics for 1984 show that the economy is gradually settling back to its pre-hurricane levels, although some sectors of the economy are above that level, and some are still behind. Gross business receipts for the county, the broadest measure of economic activity, stood at $555.4 million as of July of 1984, substantially ahead of the 1981-82 pace of $457-$460 million (See Figure 1). State tax collections in the county were also at a high level, reflecting business receipts. They were running at the annual rate of $26.5 million during the same period, compared with $21.9 million in 1982 (See Figure 2).

FIGURE 1
GROSS BUSINESS RECEIPTS
KAUAI COUNTY
1973-1984*

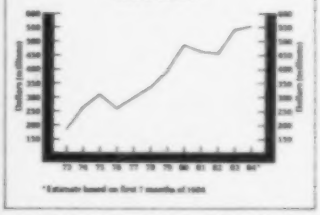
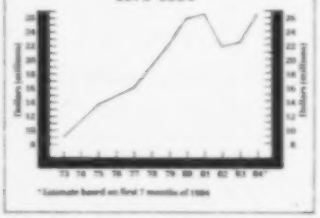


FIGURE 2
COUNTY TAX COLLECTIONS
KAUAI COUNTY
1973-1984*



Generating these strong statistics was the spectacular comeback of tourism to Kauai, which is operating close to the strong levels of the 1979 market, and way above the weak market of 1982 just prior to the hurricane.

Construction is returning to normal now that most of the rebuilding has been completed, except for state projects for which funds have been appropriated and bids are being let. Likewise, total construction jobs are down not only from 1983, but also from 1982, making construction one of the lagging activities in the current recovery. Sugar production has increased in this second drought year, but at the expense of a reduced crop next year.

With this return to normalcy, the county economy is showing evidence of a definite upturn, following the patterns being established throughout the state and in the other counties.

Like the other counties, the strong resurgence of tourism is the chief cause of the upturn. However, evidence appears to indicate that the Kauai tourist market tends to function either as an overflow market for the primary market areas, or as a destination area for repeat visitors who have seen Honolulu and Maui, and want to see beyond those shores. Since the ebb and flow of visitors tends to fluctuate according to what happens in the primary market areas, the ability of the Kauai market to capture a larger segment of the overall visitor market will depend in large part, not only on aggressive marketing for the island as a whole, but also for the various competing segments within that market. The evidence this year tends to show that those operators who have developed strong marketing programs have generally fared better than those who have taken a more passive attitude.

This situation may not be quite that visible because the Kauai market has become much more segmented than in the past with many different varieties of accommodations now available for a wider range of clients. They range from the fee-simple condo to the leased unit, rented short-term condo, the time-share condo, all the way up to the regular hotel-type accommodations. For this reason, the occupancy rates issued monthly may no longer measure the full impact of visitor counts on hotels. As a result of increasing market segmentation, families and larger groups are more often choosing the various types of condo arrangements being offered, while singles and free independent travelers (FITs) are staying with the convenience of the traditional hotel accommodation. It appears that the only operators who have been able to overcome this segmentation process are those with aggressive and effective marketing and promotional campaigns specifically targeted at the various client groups.

Given the strong stimulus of tourism, moreover, indications are that the economy is in the initial stages of a strong upturn. Total job counts for the first seven months of this year averaged 18,100, slightly below the level of a year ago (See Figure 3); but, unemployment is also down to 7.4 percent from last year's 7.8 percent (See Figure 4). Total service jobs for the first seven months are averaging 2.2 percent more than for the total in 1983, going from 4,250 to 4,345. The gain was due mainly to the increase of 4.8 percent in hotel jobs and a one-percent increase in wholesale and retail jobs.

FIGURE 3
TOTAL JOB COUNT
KAUAI COUNTY
1973-1984*

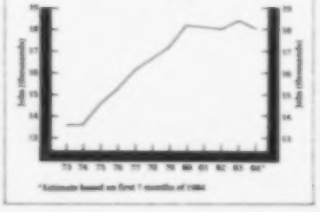
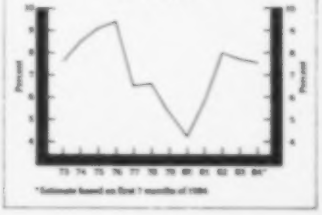


FIGURE 4
UNEMPLOYMENT RATE
KAUAI COUNTY
1973-1984*



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However, field jobs in sugar are down 6.6 percent to 1,167 as the sugar plantations are doing everything possible to keep costs down and survive in these difficult times for the industry. Jobs in diversified agriculture are also lower by 6.6 percent. State and county jobs are also running lower than last year, reflecting the shortfall of revenues of the past few years.

These shifts in employment may be indicating that Kauai's economic base is in a critical process of transformation, with tourism and tourist-related activities, such as retailing, leading the way, while the traditional agricultural and government jobs begin to decline relative to total jobs. On the other hand, with the change is coming a definite upturn in the economy. Consequently, residents of Kauai are now faced with a crucial decision whether to support the recovery, and push it in the direction of expanding and stabilizing the economic base, or return to the uncertainty of the past. Nukolii has emerged as the symbol of Kauai's ambivalence toward development, and this has adversely affected Kauai's economy more than any other factor in the past few years. While the second Nukolii referendum showed that Kauai residents chose economic growth, much still remains to be done in terms of adjusting Kauai's fiscal and development policies to reflect this new direction.

The issue stems from the fact that demands for future growth appear to be running up against developmental restraints that are basically part of the slow-growth policies of the past. Such constraints are particularly evident in the General Plan mandates, which control development by actually specifying numbers of units to be built in certain areas. This is unprecedented as a planning control device. Furthermore, the growth rate in the General Plan update is yet to be determined by the Planning Department and approved by the County Council. The input by the public at hearings and in public comment has been conflicting at best, seeking the best of both worlds.

Ironically, no matter what growth rate is finally established, the ultimate bottleneck may lie in the capacity of the infrastructure, such as the water, sewer, and transportation system to support growth. According to a State Department of Health administrative rule (Title XI, Chapter 57) that became effective December 23, 1983, any subdivision or business must connect with a **municipal** sewer system in order to receive approval for development. The prime resort area of Koloa-Poipu has no such sewer system. The county can approve a private cesspool or sewer system. However, the operations and maintenance of the facility then become the responsibility of the county rather than the state. However, the county will not be able to afford it because of a shortage of funds.

At present, the federal contribution to the construction of sewer systems is 75 percent, with the state picking up 10 percent and the county being liable for the remaining 15 percent. After next year, the federal contribution will drop to 55 percent, with the remainder to be shared between the state and county. Depending on what action the Legislature takes, the county may have to pay more for its sewers.

Thus, despite the appearance of a public consensus on the necessity of stabilizing Kauai's economic base and expanding jobs in the county, much more remains to be done to remove the obstacles to development that exist from the past, and create a more conducive business climate.

On the other hand, while the economy depends mainly on tourism and the sugar industry for its day-to-day sustenance, Kauai has a small diversified agricultural industry whose production last year was 4.6 percent of the state total. The county is attempting to develop this sector with a just-completed Agricultural Master Plan.

Kauai has enjoyed significant defense-related activity in the Pacific Missile Range Facility at Barking Sands for a number of years. But the good news for Kauai is that this facility will be greatly enlarged, providing more employment and requirements for materials and equipment in the near future.

Filmmaking is less tangible than employment on a navy base, but Kauai has done rather well in attracting still photographers who work for magazines and catalogs, TV filming crews and movie film companies. A year ago in September, Mayor Kunimura appointed a Kauai Film Industry Advisory Council to push filmmaking as one means of economic diversification for the county, as well as to promote, encourage, and help anyone who was interested in Kauai as a background for filming.

Even before this organized effort, Kauai had been known for its rivers, waterfalls, valleys, mountains, beaches, and beautiful tropical scenery which were used at one time or the other for Hollywood-type films like "South Pacific." Recently, the county took out an advertisement in the *Hollywood Reporter*, and the mayor on trips to the Mainland and Japan invited filming companies to consider Kauai as sites, promising help from the county, such as expediting the processing of permits, which his office handled.

TOURISM

It should be no surprise that tourism is leading Kauai back toward economic recovery. With the national economy growing much faster than the most optimistic expectations, the rising spendable income of Americans has shown up in increased travel to Hawaii among the items of increased consumption.

The slump in tourism hit Kauai for five consecutive years, the longest decline that any county in the state has suffered. The biggest factor in the late recovery was Hurricane Iwa's devastation in November, 1982. It was not just the reconstruction period that kept visitors away, but the undeserved image among travel agents that Kauai could not handle great numbers, an image that persisted long after the repairs were completed and hotels were ready to welcome old friends back to the island.

A personal effort by Mayor Kunimura who traveled to Asia and the Mainland to bring the message that the Garden Island was ready and waiting for visitors, and promotions by the Hawaii Visitors Bureau, hotels, industry associations, and airlines, particularly United Airlines, convinced travelers to include Kauai on their vacation destinations in 1984. Travel writers also conveyed similar messages.

Historically, the number of westbound visitors to Kauai peaked in 1978 at 837,712 after more than a decade of steady annual increases. This was also the pattern in the other counties. The decline began in 1979 with the sharp increase in oil prices by the OPEC nations and an airline strike. The national recession that started in 1980 and lasted through 1982 had a great impact on tourism due to its length and severity.

For the other counties, 1982 was the turnaround year. It would have been the same for Kauai, too, were it not for Hurricane Iwa. Instead, 1983 became a year of reconstruction and heavy promotion to get the travel routes to Kauai from East and West open again not only physically, but also mentally among those making vacation plans.

For 1983, westbound visitors totaled 691,900. This was 9.0 percent below the 760,549 recorded for 1982, far below the 1978 peak and equivalent to the pre-1976 years. However, the thorough groundwork laid out in the heavy promotions in 1983 began to pay off from the very beginning of 1984. The number for January was 23.5 percent better than an admittedly poor January, 1983, which was only two months after the hurricane. But the increase was no fluke because total westbound visitors for the first quarter came to 203,860 or 29.5 percent more than in the 1983 first quarter. This represented an increase of 7.5 percent over the first quarter of 1982.

The resurgence was strong through the first five months of the year, but the summer was somewhat below expectations, possibly due to other attractions such as the Summer Olympics in Los Angeles. But the total figure for the first eight months was still 13.9 percent better than for the same period in 1983. Compared to the same time in 1982 prior to Hurricane Iwa, the 1984 figures show a 1.2 percent gain (See Figure 5).

Kauai's hotel room inventory climbed steadily in the last decade and reached a high of 5,207 in 1982. The hurricane reduced the inventory by 1,061 rooms, of which 838 were in Poipu, the area most exposed to the wrath of Iwa. Several new condominium projects have been added to the visitor plant, and the hotel room inventory has climbed to an all-time high of 5,313 this year. Despite this increase, the occupancy rate this year is av-

eraging 65 percent, an encouraging gain from the depressed 57 percentile range in the past two years (See Figure 6).

FIGURE 5
WESTBOUND VISITORS
KAUAI COUNTY
1973-1984*

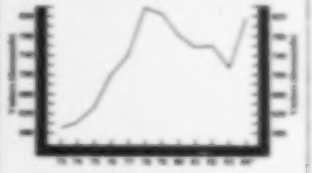
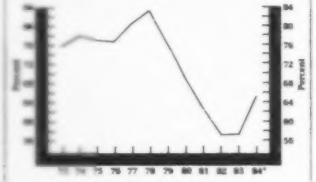


FIGURE 6
HOTEL OCCUPANCY RATE
KAUAI COUNTY
1973-1984*



The changing mix in the hotel inventory is increasing the complexity of the Kauai visitor market. The number of condominium units has increased steadily over the past several years so that they make up 30 percent of Kauai's hotel room inventory today. Their increase is apparently generated by demand. In this year of the return of the visitor to Kauai, condominiums appear to be filled to a larger degree than hotels are.

This dual visitor market has finally come to Kauai, the last county in the state to offer the visitor the more relaxed type of accommodation that has been accepted in other destination areas for years. Because of the numerous small condominium developments on Kauai, this increasing dual visitor market is not easy to discern, except that some of the island's larger hotels didn't appear to be sharing in the big increase in the number of visitors. Condominiums appear to attract families who have been to Hawaii before. They tend to prefer the larger units and the flexibility of being able to prepare their own meals when they want to. This creates a great advantage in terms of cost. Hotels do attract families too, but, they generally concentrate on the FIT market.

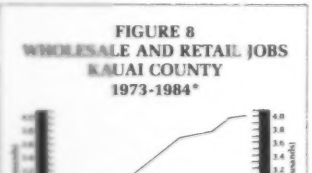
The revival of tourism this year over hurricane-depressed 1983 is helping the hotel-employment picture and retailing around the island. Employment wasn't that badly affected last year by the hurricane except for two months after the big damage. In fact, workers were needed to get the hotels ready for their guests. Average monthly hotel-service employment last year was 2,200. This year, the average is running slightly over 2,300, which would be a record high if maintained for the year (See Figure 7).

Retailing was hit much harder last year, because almost all retailers receive some benefit from visitor spending, but some a great deal more, particularly the shopping centers and dining places. Kukui Grove Center, by far the largest shopping center on Kauai, estimates that visitors account for 20 percent of its sales. The sharp increase in the number of visitors this year is showing up in the higher volume of business being rung up (See Figure 8).

Even more dependent on visitors is the Coconut Plantation Shopping Center in Wailua. Last year was one of declining numbers after years of steady increases. But the visitor has returned this year, and gross retail sales volume is setting new records. The center management sponsors several events a day, such as perfume testing, porcelain making, or a hula show—which have been of great interest to visitors.

FIGURE 7
HOTEL SERVICE JOBS
KAUAI COUNTY
1973-1984*

FIGURE 8
WHOLESALE AND RETAIL JOBS
KAUAI COUNTY
1973-1984*



The importance of tourism for Kauai was not lost on the leaders of the island. From the Mayor on down to industry leaders, they knew that tourism had to be brought back to normal after the hurricane if the economy was to get back on track again. The hard work of repairing the damage to the image of the Garden Island is paying off. It took a lot of time, effort, and money to do this. The story of the devastation of a large section of Kauai was a media event, and people across the country read about it. But a return to normalcy after the cleanup and reconstruction hardly rates space or time in day-to-day news gathering. Therefore the image of devastation remains in the minds of people, and this makes them avoid such places until assured that it is safe again.

The united effort of visitor industry officials who helped turn the tide around is going to continue. The Kauai Chapter of the Hawaii Visitors Bureau was beginning to gear up around mid-year to coordinate promotion for the industry on Kauai. The Poipu Beach Resort Association was formed early in 1982 to promote the Poipu destination area. It soon found itself combatting the wrong impression people had of Poipu. In fact, it was the travel agents who didn't have the correct information and steered their clients to other vacation sites because sending people to damaged places would hurt their business the following year. Although the association works with a small budget compared to those of other such groups, it has been able to leverage other resources by working with organizations such as United Airlines in advertising promotions and travel seminars.

Being the biggest carrier between the Mainland and Hawaii, United has a definite interest in promoting the islands. It also started a daily West Coast-to-Kauai flight on August 1, connecting the last of the major islands directly to the Mainland. The flight comes from Los Angeles to Lihue, then goes on to Maui before returning to Los Angeles. United estimates its direct flight loads to Kauai will be good for the rest of the year. Although some pessimists felt that most of those aboard would go on to Maui, about 45 percent of the passengers were debarking at Lihue in the first month. Hotel managers generally feel that the direct flights will help tourism grow on Kauai. If passenger loads remain high, United can be expected to schedule a second direct flight to Kauai, or other competing airlines may start direct routes to Lihue.

Those anticipated extra flights could easily be accommodated in the fall of next year when the new Lihue Airport terminal building opens. Spaces for the four scheduled airlines now operating out of Lihue Airport are included in the building plans plus two additional spaces for airlines that may decide to fly to Lihue in the future.

Those additional flights may be needed in a year or so if the three luxury hotels now under construction will have any appeal for those who want to visit Kauai. One is the Sheraton Princeville overlooking Hanalei Bay, and another is the Hanalei Plantation Hotel, which also looks out over Hanalei Bay, and almost neighbors with the Sheraton. The third is the hotel at Nukolii, which will be managed by the Hilton Hotel chain.

The Sheraton Princeville Hotel is being built in the form of three separate buildings terraced on the side of a cliff. The building at the lowest level will front on the sand beach. The 300-room structure will be Sheraton's flagship hotel—a first-class operation. It is scheduled to open next summer. Its ballroom will have a capacity of 7,000 and can be used with other facilities for conventions. The hotel will have two restaurants and a coffee shop. There will be a pool near the beach.

Developer Bruce Stark is also building a luxury hotel at the Hanalei Plantation site overlooking the bay and valley. Like the former facility, the new hotel will be made up of buildings built down the slope to the beach below. There will be 12 buildings with a total of 204 rooms, of which 64 will be suites. The three-story main building will be located at the top, and will contain the lobby, administrative offices, restaurant and lounge, a banquet room, and shops. Two swimming pools and a pavilion will be located at the lower end of the property, and there will be two tennis courts on the grounds. Site work started in November, 1983, and the hotel is scheduled to open in November, 1985. Development cost will total approximately $60 million.

Work on the hotel building at Nukolii which was halted by the State Supreme Court two years ago, was restarted on August 15 by

Hawaiian Construction and Dredging Co. with court approval following the second referendum in which voters approved the project last year. Work had stopped on October 15, 1982, on orders from the Supreme Court in this controversial case that pitted anti-development forces against the developers of the resort. The 350-room luxury hotel is scheduled for completion by Christmas of 1985, but it will be opened on October 1, 1985, according to present plans.

The Poipu destination area was the most severely damaged in the November, 1982 storm because it was in the direct path of the hurricane, which came in from the ocean.

Amfac Hotels' Waiohai was closed for eight weeks to the end of January, 1983, and its Poipu Beach Hotel next door was closed to the end of March. Most of the damage was to equipment in the basement of the Waiohai, such as the health club. In addition, the buildings and grounds sustained severe damage.

Much of the strong post-hurricane recovery of the Waiohai and Poipu Beach Hotels was due to their strong marketing programs directed to conference, incentive, and other groups. In addition, the Poipu Beach has a 38-percent repeat factor, and the newer Waiohai a 15-percent repeat factor. Even with the late start in a poor year, the Waiohai ended up with a 53-percent occupancy rate while the Poipu Beach ran it up to 65 percent. They are aiming for 65 and 85 percent occupancy rates, respectively, this year, and further gains next year.

The Sheraton Poipu Beach Hotel, on the other hand, is beset with a much longer recovery period because its beachfront hotel suffered almost total destruction, with 60 units out of 170 lost. The repair included heavy construction work through March of this year, and completion will take most of the year. The result will be a brand new structure with a new restaurant and new rooms. Landscaping will be new, too, as the grounds were badly damaged. In addition, the destruction of its popular beachside bar, now being rebuilt, caused heavy losses for Sheraton this year. In pre-hurricane days before the new 230-room addition was built mauka of the road, the hotel used to have occupancy rates in the 90-percent range every year. With completion planned for 1985, Sheraton sees a big push next year to get their former guests and conventions back to Poipu.

The Kiahuna Plantation condominium apartments probably suffered the greatest overall damage. They were down for over a year due to hurricane damage, and the last condominium only opened in December, 1983. According to management, occupancy should be around 50 percent for 1984, and an improvement is expected for next year as marketing gets rolling again.

Kiahuna's 18-hole golf course was opened last February, and the clubhouse was completed three months later. Being the only course for the Poipu area, play has been good. Ground was broken in July adjacent to the golf course for the Kiahuna Shopping Center, which will have 32,000 square feet of floor space. The scheduled opening is for spring of 1985. There will be a grocery, clothing store, and a fine restaurant among other shops in the center.

Kauai Surf Hotel is just beginning to recover from the effects of Hurricane Iwa. Its beautiful grounds were badly damaged as were parts of the hotel. Its normally strong convention business has not returned to pre-hurricane days, and its traditional guests from the Mainland appear to be going to Europe this year to take advantage of the strong dollar. However, occupancy for the first half of 1984 stood at 77.6 percent, a substantial increase over the 61.7 percent recorded for the same period last year.

Princeville Development Corporation is planning to develop the second phase of its large tract at Princeville. The first 1,000-acre phase is virtually sold out except for a 10-acre future hotel site on the northeast end of the tract. Two condominium projects, one of 32 units and the other of 44 units, are close to start of construction.

The phase-two plans cover 1,200 acres and is before the State Land Use Commission. Residents of Anini, seaward of the tract, have been opposed to the development for environmental and other reasons.

Of the phase-two acreage, 421 acres are being planned for residential resort, recreational, and public use. About 75 percent of the 421 acres will be improved and subdivided into 1,240 single-family houselots ranging from 6,000 to 10,000 square feet in size. An additional 390 acres will be used for a second 18-hole golf course, with 80 developable acres held in reserve and the remainder to be used as permanent open space. In addition, there will be two resort condominium sites, and five acres for public use—possibly a regional library and some retail space.

SUGAR

Hard hit by disasters due to natural and other causes the past four years, the sugar plantations on Kauai are making a valiant effort to cut costs, raise productivity, and make operations sufficiently profitable to stay in business. The verdict for each plantation will not be in until the results of measures to alleviate the problems are known.

On the legislative front, domestic sugar must be kept in the National Farm Act when it comes up for reconsideration next year before Congress. Unless domestic sugar producers continue to receive the protection now provided under the act, they (including Hawaii's plantations) will not be able to compete against foreign producers, who are subsidized by their governments. A great lobbying effort will need to be made in Washington, D.C. next year to preserve the industry.

The sugar plantations on Kauai have not been in such dire straits for many years, if ever. In 1981, disastrously low prices caused huge losses for almost all of the companies. Then came the wettest year on record in 1982 including Hurricane Iwa which severely damaged the 1983 crop and part of the 1984 crop. The wettest year turned into the second driest year in 1983, and the drought continues this year, affecting crops for the next two years.

To withstand this degree of adversity takes a unified commitment by management and labor to the overall objective of saving the industry, and this is happening. The ILWU agreed to forego wage increases in 1983 as well as to accept other concessions. The work force has been cut wherever possible, and operations have been shut down for short periods or workers put on short weeks for several weeks. These steps cut labor cost significantly. In addition, increases in efficiency in operations helped reduce cost further. Despite these efforts, production cost per ton of sugar was more than offset by the increased cost of supplies and materials in 1983. For the industry as a whole, the profit achieved in 1983 was predominantly from the sale of molasses and excess electric power to the utilities.

In 1983, Kauai sugar plantations produced 205,000 tons of sugar, down 5.5 percent from the 217,000 tons recovered in 1982. But prices were higher in 1983 and gross revenues totaled $77.7 million, slightly more than the $76.4 million crop value in 1982.

Molasses revenues were much better in 1983 because the price was much better than in 1982. Returns came to approximately $2.7 million in 1983 compared with $1.7 million in the previous year.

Sale of excess power to Kauai Electric Co. was a better source of revenues than molasses last year. The continuing drought this

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year has dried up the water supply and hurt power generation, leaving little excess to be exported.

Overall sugar production levels for the first seven months of 1984 indicate a strong upturn of output of 9.8 percent (See Figure 9). However, the overall effect of cost cutting and labor saving policies is evident in the sharp drop of sugar jobs of 6.6 percent during the same period (See Figure 10). This contrast in terms of trends in productivity as opposed to jobs reflects a general trend within the industry, as sugar struggles to remain competitive, while employment continues to diminish over time.

FIGURE 9
RAW SUGAR PRODUCTION
KAUAI COUNTY
1973-1984*

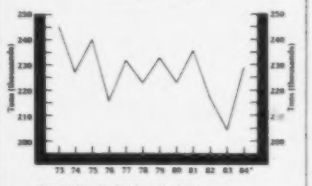
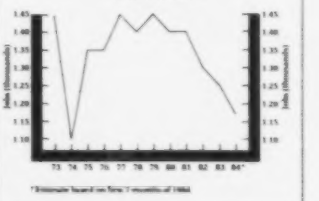


FIGURE 10
SUGAR FIELD JOBS
KAUAI COUNTY
1973-1984*



Kekaha Sugar Co. is forecasting a sugar production of 49,831 tons this year, down from the 54,819 tons produced in 1983. This difference can be explained by the fact that more acres were harvested last year. However, the yield this year will also be down to 11.95 tons of sugar per acre, low by Kekaha standards. Last year, it was 12.69 tons per acre. The basic reason for the drop is the damage done to sugarcane by the hurricane, reducing the stands of cane.

In the meantime, the plantation is seeking to reduce its work force of 438, and had plans to go to a 32-hour work week for up to 20 weeks to cut costs. Even with this savings, Kekaha is expected to break even at best. Plans to improve milling operations to increase power production and raise sugar yield are also underway. Unloading station operations will be improved so that sugarcane will not be wasted. This should result in better sugar yields. A trash-reclamation system will be installed so that more power can be generated. During the off-season, Kekaha will replace its 1,500-kilowatt generator in the mill with a 2,500-kilowatt generator purchased from McBryde Sugar Co. This will give the mill three generators of 2,500 kilowatt capacity each. It takes the same amount of bagasse to run a 2,500 or 1,500 kilowatt generator, so Kekaha's average unit cost of power generation will be reduced.

Kekaha's mauka fields which make up one-third of its planted area are entirely in drip irrigation. The efficiency gained in this process has eased the lack of normal water volume. The makai fields are partly in drip, but there are pumps to supplement the water supply.

The sugar operations of G&R Inc. (Gay and Robinson) are also down this year due to hurricane damage. A crop of 15,000 tons of sugar is forecasted for 1984, 7.8 percent down from the 16,277 tons harvested last year, said Warren Robinson, President. In normal years, sugar production is around 17,000 tons or more annually. Yields also will be down this year to 11.72 tons of sugar per acre from last year's 12.15 tons of sugar per acre. The Robinson family operation is also suffering from the drought. It does not have any water storage facility so must depend on a steady flow of water for irrigation. Its fields will be completely in drip by the end of this year, and that will help during dry periods.

From a high of 233 employees in 1975, G&R Inc. has had to cut their number of employees down to 136 this year. The reduction has been made possible by the conversion to drip irrigation. Their sugarcane is processed by Olokele Sugar Co. G&R's operation was profitable last year only because its cattle production returned a profit. Between 600 and 800 heads of cattle are shipped to the Oahu feedlot annually. However, the drought has hit the herd up in the mountain areas, with many having died of starvation.

Neighboring Olokele Sugar Co. will produce an estimated 27,200 tons of sugar this year, down 652 tons from last year, with yields slightly better than last year's 11.69 tons of sugar per acre. But it is expecting a big jump in yield next year to 13.23 tons of sugar per acre, and an increase in total production to 30,400 tons of sugar. That will signal a recovery from the hurricane, the first plantation that will be back to normal.

Poor in water resources, Olokele was the first plantation to install drip irrigation. Now it has started to automate that system so it can irrigate on weekends, and clear the system automatically by back flushing when the silt builds up in the tubes. This will be a four-year project. In order to conserve on labor costs, Olokele put its employees on a 32-hour week in mid-July for ten weeks, and has put a freeze on hiring except for critical jobs.

McBryde Sugar Co. probably sustained the heaviest damage of the island's plantations from the record rains and hurricane of 1982. The heavy rains forced delays in harvesting the 1982 crop, and some acreage had to be carried over to the 1983 crop. The hurricane damaged the fields so that yields will be below normal for both the 1983 and 1984 crops. McBryde normally produces 60,000 tons of sugar a year, but this year's crop will be a low 49,500 tons. This year's drought, which cut normal rainfall at McBryde by more than half, will affect the 1985 crop adversely. Alexander Reservoir, which holds 850 million gallons of water, has been empty for some months. The Waita Reservoir, with a capacity of 2.3 billion gallons, was down to less than 5 percent of capacity at mid-year. McBryde doesn't see a return to normal production until 1986, that is, if there is sufficient rainfall next year.

The drought has also reduced power generation at McBryde, and sales to Kauai Electric are down to half the volume of a normal rainfall year. To relieve its financial difficulties, the company has reduced its work force by 10 percent since the beginning of 1983, and put a freeze on hiring. Work opportunity has also been reduced for those on the payroll, and other costs have been cut. But, McBryde will have another loss in 1984.

Lihue Plantation Co., like McBryde, is practicing survival agriculture as the drought intensifies and sugarcane begins to die in the unirrigated fields. This has forced harvesting of younger cane from the 1985 crop before they are totally lost. Even in the irrigated fields, only the cane that needs it most, gets the water.

Chemical ripening of cane with harvesting scheduled when the sugar content is highest has helped yields. In the milling process, by getting all the juice out of the cane, and striving for more sugar and less molasses in the boiling process, the result has been an increase of 1.7 tons more sugar per acre even though each acre is yielding 10 tons less sugarcane than last year. This year's production will be 72,000 tons compared to the earlier forecast of 68,500 tons. The resulting yield will be 9.6 tons of sugar per acre, or a 17-percent increase over the 8.2 rate in 1983.

Lihue has also tried hard to reduce costs. The company manpower was at 683 at the beginning of the year, and the reduction target is 654 by the end of the year. It wants to trim it down to 550 by 1988. Cost of production was reduced from $476 per ton of sugar in 1982 to $392 per ton in 1983, and that still didn't produce a profit. Its new goal is to get the figure down to $350, and the

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plantation is attempting to do this essentially by increasing yields.

DIVERSIFIED AGRICULTURE

Kauai County has never played a dominant role in the state's drive to produce more of its own food or to grow more export crops. The value of the county's diversified agricultural production last year amounted to $9.1 million or only 4.6 percent of the state's total production of $199 million. The 1983 value represented a decline of 3.9 percent from the previous year, due mainly to destruction wrought by Hurricane Iwa in November, 1982.

Suffering the heaviest damage by far was the papaya industry, which was virtually wiped out in the storm, requiring complete replanting, and left without a fruit to harvest for most of the year. Production was at 780,000 pounds in 1983, down from 3.2 million pounds in 1982. But this year, production from the new plantings was high in yield, with Best Fruits, the processing cooperative for the growers, reporting million-pound weeks. During the summer, the co-op installed a double-dip processing line to take the place of EDB fumigation, which became illegal on September 1.

Like the Big Island growers, Kauai ran into overproduction problems, and all of the harvest could not be marketed. Some of the fruit was sent to Oahu markets, which were already saturated with the huge harvests from the Big Island.

Kilauea Agronomics, which has a 330-acre guava orchard on former sugar lands, had the same problem of overproduction. The yield last year was 25,000 pounds per acre for a total production of 3.5 million pounds, which were converted into puree. Eighty percent of the production is marketed in the islands, which is already saturated. Its parent company, C. Brewer & Co., is attempting to develop more markets on the Mainland.

Kauai is also the biggest producer of seed corn, with three companies having operations there. DeKalb-Pfizer Genetics has its seed farm in Hanapepe Valley, Pioneer Hi-Bred International has farms in Waimea Valley, Waimea, and Kekaha, while Pride-Northrup King operates in Waimea. Pride-Northrup King has 105 acres of nurseries, used almost entirely for seed corn experiments, but also 10 acres for soybean seed research, and five acres each for sunflower and cotton seed research. It receives the corn seed early in the summer, and its researchers get three successive crops which advances the research rapidly as only one crop is possible on the Mainland. Cotton can be grown year-round, and the company plans to increase this acreage to speed up research.

Pioneer Hi-Bred moved into a new office-warehouse building beyond Kekaha last year. It is doing research work with corn on 110 acres, with soybeans on 10 acres and with sunflower on five acres. It has eight full-time employees and 15 to 25 part-timers with the heaviest work during the winter. The hurricane wiped out its entire crop late in 1982, but it was back in production a month later.

One of the bright spots on the diversified agricultural scene on Kauai is the successful operation at Prawns of Hawaii, Inc., in Kilauea. The farm was started in 1977 with 24 acres of ponds. This was expanded to 32 acres a few years ago, and last year was its first profitable year.

The farm had been getting larvae from the state hatchery but last year, it put in its own hatchery. It is a recirculating salt water hatchery, requiring the hauling of seawater from the ocean. It has gone through two rounds of baby prawns now with a survival rate close to 100 percent.

The farm operates with four full-time employees and three part-timers. They have kept operations efficient and costs low and succeeded where C. Brewer & Co. and Amfac failed in their attempts to raise prawns through corporate agriculture.

In order to push the development of diversified agriculture as an important part of the economy, the County Administration had a Kauai Agricultural Master Plan prepared. The Plan recommended that a comprehensive marketing profile be undertaken as a first step in implementation of the plan.

The study sees excellent opportunities for the expanded production and marketing of some of Kauai's farm crops. For the short-term, the suitable crops listed are bananas, taro, guava, papaya, and such vegetables as eggplant, Manoa lettuce, green onion, and bell pepper. For the long-term, the list includes feed crops, seed corn, flowers, and potted plants.

Guava and papaya production have already reached the point where marketing cannot keep up with production. Banana production has been increasing, particularly in the Kilauea area, to make the island more self sufficient. Successful vegetable production requires better coordination among growers and much better marketing, problems that have plagued local agriculture for years.

Transportation has been, and remains, one of the problems that farmers face in their marketing program. Matson Navigation Co.'s more efficient freight service has improved transportation for such export crops as papaya and guava puree. Papaya in containers that leave Nawiliwili Wednesday afternoon get to Honolulu Thursday to make the Matson ship that leaves that day for Oakland, and arrives there the following Wednesday. Since the double-dip fumigation process requires that the fruit be under refrigeration for ten days, the seven-day transit to the West Coast fits the schedule well. For the Southern California market, the fruit is shipped to Honolulu by Young Brothers barge to make Matson's Los Angeles-bound ship. At one time, it took Matson seven days to get freight from Honolulu to the West Coast, but today it takes only seven days from any Neighbor Island port.

In the same way, Matson can get fresh produce from Los Angeles to Kauai in seven days week after week. It is this kind of consistency that local farmers must contend with if they hope to make the island more self-sufficient by replacing some of the imports.

CONSTRUCTION

As mentioned earlier, construction took a strange turn on Kauai in 1983 due to Hurricane Iwa. It was a year of repair and reconstruction as island residents and businesses went about the task of cleaning up the severe damage left by the hurricane.

The value of private residential permits soared to $71 million for 1983, 153.4 percent more than the $28 million volume for 1982. The value of private nonresidential permits for 1983 was $66.8 million compared to $16.2 million in 1982, a difference of 312.3 percent. Only the total of public contracts awarded was down to $7.9 million for the year, off 68.5 percent from 1982 as government austerity continued.

Construction volume is down this year, returning to pre-hurricane levels where the industry is building a base from which to fashion a recovery. Permit volume for private residences for the first half of 1984 came to $21.6 million, down 45.9 percent from 1983 when comparable volume was $39.8 million. For private nonresidential permits, first-half volume was $5.7 million, down 65.9 percent from the $16.7 million recorded for the same period in 1983. These are the approximate levels that construction had retreated to in 1982.

The volume of government contracts awarded this year was again skimpy, but the huge Lihue Airport project distorts the comparison with last year. Total contracts awarded for the first seven months of 1984 amounted to $32.5 million of which $32 million was in state contracts. In the same period last year, total contracts amounted to only $3.8 million. This year's big state contract volume was made up of the $19 million-segment of the Lihue Airport project plus several hurricane-repair and capital-improvement projects. County projects came to only $499,000 compared to $2.1 million for the first seven months of last year.

Construction employment also reveals the decline in the industry this year. Monthly employment averaged 800 last year, but the average has fallen to around 525 this year. In 1982, the average was 650.

In the second half of the year, the work situation was improving with the state advertising for more bids on projects whose funding would lapse unless contracts were awarded. Kauai Builders, one of the larger contractors on the island, reported that it was down to six men in the first half due to a drying up of contracts. But it won the bids for several contracts in June and July, and its staff was up to 20 men. Work in the private sector is

beginning to pick up also, but difficult negotiations with construction trades unions could hurt the industry in the fall.

RENEWABLE ENERGY

The drought has greatly reduced renewable energy generation on the island this year. In a normal year, Kauai Electric Co. purchases 50 percent of its annual power requirements for sale to consumers from the sugar plantations which generate power by burning bagasse in their factories and from hydroelectric plants.

In this very dry year, hydroelectric power generation is down substantially. The largest hydroelectric power plant, located at Wainiha, has been working with only half the volume of water that it gets normally. In the meantime, the drought which began last year has reduced crop tonnage, resulting in a lower volume of biomass for power production.

The plantations provided 119 million kilowatt hours of power to Kauai Electric Co. in 1982, 106 million kilowatt hours in 1983, and 90 million kilowatt hours in 1984.

The utility has been forced to burn more oil this year than in other years due to the shortfall in renewable energy. However, the unit cost of production has remained stable due to increased efficiency of the utility's plants and a wider spread of fixed costs due to the greater use of oil generated power.

Lihue Plantation Co. is the only firm power source for Kauai Electric. It has to supply the utility with a minimum volume of power throughout the year, and receives a higher rate than the other plantations which export power only when they have an excess beyond their needs. Lihue supplied 76.3 million kilowatt hours or 64 percent of the 119.3 million kilowatt hours that all the plantations sold in 1982.

Lihue is short of bagasse this year, basically because it has taken a thousand acres of marginal land out of sugar production. But the drought has had an effect, too. It is purchasing excess bagasse from Olokele Sugar Co. and also burning oil to meet its export requirements. To supplement its biomass needs, Lihue Plantation started a 10-acre eucalyptus tree farm this year as an experiment. If the trees do well, the thousand acres once in sugarcane will be converted into a tree farm. Lihue is under contract to supply power to Kauai Electric until the year 2000.

McBryde's hydroelectric production has been affected the most because of subnormal operations at Wainiha and minimal generation at the Kalaheo power plant due to the Alexander Reservoir being empty. Biomass-fueled boilers continue to produce more power than the factory needs, but pumping of irrigation water has been heavy due to the drought. Consequently, the sale of excess power has been running about half last year's volume.

McBryde has plans to build a second hydroelectric generating plant at Wainiha in the mountains several miles above the present unit. Design and engineering work has been going on, but no decision had been made in early fall as to when construction would begin. The new unit will have a 3.8-megawatt capacity, and the investment would total $12 million.

Kekaha Sugar Co. has had two small hydroelectric plants in operation for some years using Waimea River water, but it has more ambitious plans in the Kokee watershed. The Kitano project is ready to begin but financing has not been arranged so far. Using an 800-foot drop in the Kokee ditch, a 24-inch diameter conduit would be installed with the generating unit at the base. The plant will have a capacity of 1.4 megawatts and would produce more power than the two present plants combined. The cost is estimated at $2.8 million. Most of the power would be sold to Kauai Electric.

A more ambitious plan involves the Kawaikoi Dam project at Kokee, where a 12-billion gallon reservoir would be created. The water would operate a series of generating units as it runs down to the lower land where 1,500 acres of arid land would be planted in cane. However, this project has been postponed for now because the relation of benefits to costs have not been determined as significant enough to justify the investment.

Olokele Sugar Co.'s new 1,250-kilowatt hydroelectric plant on the Olokele ditch system has been running at half capacity due to the lack of water. But production has been sufficient for its own needs. G&R Inc., which shares water from this same ditch with Olokele, is also looking into the possibility of building another generating plant on that ditch system.

To conserve water, Olokele Sugar has installed a 42-inch diameter steel siphon to replace a 2,600-foot section of open ditch and flume on the Hanapepe Valley ditch system near the source. The plantation estimates that it saves three million gallons of water a day valued at $300,000.

DEFENSE ACTIVITIES

Outside of Oahu, only Kauai has military activity that is of any economic significance. This is the Pacific Missile Range Facility at Barking Sands, which is not only presently important to the county economically, but in terms of its potential for long-range expansion.

The mission of the facility is to provide training to entire battle groups in the area of anti-submarine warfare, and also air-to-air and surface-to-air missile target practice. Offshore, the facility has the largest instrumented undersea range in the world covering over 800 square miles of ocean bottom. It can track submarines or torpedoes in the water with an accuracy of plus-or-minus 20 feet. It also operates in air space of 50,000 square miles up to a height of 50,000 feet. Aircraft train with submarines, and are able to provide targets for the undersea crafts.

The facility also has a research and development mission. The newest state of the art weaponry—torpedoes and aircraft weapons—are tested at the range.

The activity in the underwater range is increasing rapidly, and the navies of friendly foreign nations also use this facility, such as during the Rimpac Exercises when the navies of Canada, New Zealand, Australia, and Japan joined the U.S. Navy for joint exercises.

Usage has increased to such an extent that plans are under way now to expand the range to 20 times its present size. The range stretches northwestward from offshore Barking Sands for 800 square miles. Plans call for expanding the range to 16,000 square miles. It is to be expanded both northwestward toward Midway and southeastward toward Oahu. The new underwater range will have an accuracy of plus-or-minus 100 feet, which is sufficient for the type of training that is intended. Accuracy for R&D work is still plus-or-minus 30 feet, so the present range can be used for that work.

At present, the Navy has 140 enlisted personnel at the facility, including 17 officers, and 57 civilian employees. Dynalectron Co., the contractor which supplies the support services, has 400 full-time employees on base. It operates and maintains the entire facility, including security, flight line, radar, telemetry, communication, computers, ordinance, and weapons recovery.

In the next two fiscal years, the expansion of the facility will require the addition of 40 contract employees, 26 civil servants, and 40 to 50 more military personnel. This will add $11.4 million to the civilian payroll, and raise the Navy payroll to $30 million. Replacing equipment and facilities will cost in the area of $49 million. Construction, including a new air strip, hangar, and other facilities will cost $20 million over the next two fiscal years. The maintenance budget will increase from $18.5 million in 1984 to $47 million in 1986.

University of Chicago scientists come to Barking Sands annually to launch huge balloons with instrument packages to collect isotopes of high energy in the upper atmosphere. Last year, they identified 96 elements. Scientists also attempt to measure the earth's magnetic field.

The Barking Sands facility is increasingly vital to the Navy. It will not move away from Barking Sands; in fact, the potential for further expansion is greater. It is not likely that another location in the world can take the place of Barking Sands. There is a small range off Southern California, but it is no threat to Barking Sands. That space is crowded with shipping lanes, air lanes, and oil rigs, and not very likely to gain the importance that Barking Sands has attained.

SATELLITE TRACKING STATION

The satellite tracking station at Kokee has been involved with the National Aeronautics and Space Administration's space pro-

gram from the beginning as one of 12 stations strung around the world to monitor the space program. The station tracks, and communicates with the satellite and transmits data back to the Goddard Space Center in Houston, Texas.

The station is scheduled to close down in October, 1985, when two satellites positioned 32,500 feet high would require only one station in New Mexico for communication in the shuttle program.

The station is down to 72 employees already, less than half its complement when it was at full strength. The State, Navy, and Air Force will try to absorb the employees when the station closes, but not all will find jobs.

CONCLUSION

It is our considered opinion that the cogs are in place for the economy of Kauai to begin a period of strong economic growth and consolidation. What remains to be established, however, is the commitment of the people of Kauai to support the kind of institutional and fiscal changes that will be necessary to lay the groundwork for a strong future economy. Whether or not the county will be able to provide the kinds of jobs and opportunities to support the lives of future generations of Kauaians will depend critically on the choices now being made by the residents of Kauai. The prospects for future growth are good. Kauai is blessed with scenic and natural, agricultural, and human resources that have every potential for being fully and well utilized for the future economic prosperity and well-being of the people of Kauai. However, those prospects are not without costs in terms of the financial resources that must be mobilized to develop the kinds of infrastructural and program capability necessary to plan, implement, and administer economic development. Thus, to choose development is also to assume the responsibility inherent in that choice, in terms of the willingness to take on a fair share of the county's fiscal burden to support development. It is a burden that will increasingly fall on the shoulders of the people of Kauai.

Shurei Hirozawa
Vice-President
Marketing Division

Kauai County Statistics

	Unit	Period	1979	1980	1981	1982	1983	Jan.-July 1984	% change 1st Qtr. 1984/1983	% change 1983/1982
Population, Resident	number	July 1	38,100	39,300	40,000	40,900	41,700	n.a.	20	n.a.
Per Capita Personal Income	dollars	total	7,723	8,788	9,326	9,869	n.a.	n.a.	n.a.	n.a.
Civilian Labor Force	number	mo. avg.	18,450	19,950	20,550	21,300	22,000	21,893	3.3	−0.9
Employment	number	mo. avg.	17,450	19,100	19,400	19,550	20,300	20,235	3.8	−0.7
Unemployment	number	mo. avg.	1,000	850	1,200	1,700	1,700	1,650	0.0	−4.1
Unemployment Rate	percent	mo. avg.	5.3	4.2	5.8	8.0	7.7	7.5	−3.8	−3.8
Total Job Count[1]	number	mo. avg.	17,200	18,200	18,150	18,050	18,450	18,100	2.2	−1.4
Gross Business Receipts	mil. $	total	394.4	487.7	465.1	457.3	541.5	277.7	18.4	−2.6
State Tax Collections[2]	thous. $	total	22,195	25,886	26,523	22,165	22,481	15,468	1.4	1.1
Total Bank Deposits	thous. $	mo. avg.	130,465	143,588	162,797	173,980	212,261	221,895	−1.1	1.1
Debits to Demand Deposits	mil. $	total	995.1	1,132.2	1,109.7	1,110.3	1,251.2	729.9	12.7	−1.4
Estimated Westbound Visitors	thous.	total	825.4	781.4	757.8	760.5	691.9	475.6	−9.0	16.3
Intended Length of Stay— Westbound	no. of days	mo. avg.	3.27	3.40	3.48	3.51	4.21	n.a.	19.9	n.a.
Hotel Inventory	number	June	4,064	4,435	4,832	5,207	4,475	5,313[3]	−14.1[3]	26.7
Hotel Occupancy	percent	mo. avg.	76.5	69.0	62.7	57.2	57.2	64.2	0.0	13.0
Private Permits	thous. $	total	113,920	133,094	67,311	44,236	137,850	34,013	211.6	−45.7
Residential Permits	thous. $	total	100,024	74,795	41,368	28,027	71,015	25,122	153.4	−40.4
Single Family	no. of units	total	512	377	353	230	282	203	22.6	41.0
Multi-Family	no. of units	total	1,169	793	120	118	79	39	−33.1	200.0
Non-Residential Permits	thous. $	total	13,896	58,299	25,943	16,209	66,835	8,891	312.3	−56.7
Public Contracts Awarded	thous. $	total	13,537	10,938	18,083	25,061	7,882	32,541	−68.5	764.8
Federal	thous. $	total	440	525	527	4,912	533	0	−89.1	−100.0
State	thous. $	total	8,619	2,179	13,384	13,619	2,966	31,347	−78.2	2,041.2
County	thous. $	total	4,477	8,234	4,172	6,530	4,382	1,194	−32.9	−42.5
Real Estate Resales										
Single-Family	number	total	69	65	45	39	55	44	41.0	41.9
Average Price	dollars	cum. avg.	128,184	165,787	168,294	112,518	124,539	147,030	10.7	18.2
Condominium	number	total	70	43	12	27	28	27	3.7	125.0
Average Price	dollars	cum. avg.	133,000	147,500	144,000	162,380	141,964	131,848	−12.6	−20.7
Electricity Generated	mil. KWH	total	204.2	211.1	218.7	217.0	224.8	142.6	3.6	13.3
Telephone Access Lines[4]	number	end per.	n.a.	n.a.	17,329	17,867	18,927	19,450	5.9	4.8
Sugar Production, raw sugar 96	thous. tons	total	232	223	236	217	205	134	−5.5	9.8
Diversified Agriculture	mil. $	total	8.5	10.4	11.0	9.5	9.1	n.a.	−4.2	n.a.
Crops (excludes sugar)	mil. $	total	4.1	4.7	5.7	4.8	4.0	n.a.	−16.7	n.a.
Livestock	mil. $	total	4.4	5.7	5.2	4.7	5.1	n.a.	8.5	n.a.

[1] *Refers to number of jobs rather than number of persons employed. Persons with more than one job are counted more than once.*
[2] *Totals do not include property taxes.*
[3] *Data compares February 1983 and 1984.*
[4] *Access lines represent the lines connecting customers to the network regardless of the ownership of the customer premises equipment.*
n.a. = not available

RESEARCH DEPARTMENT
NEIGHBOR ISLAND PROFILES
SEPTEMBER/OCTOBER 1984

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ECONOMIC INDICATORS

NEIGHBOR ISLAND PROFILES

MAUI COUNTY IN 1984

The County of Maui experienced a year of unprecedented economic expansion in 1984. Without doubt, the visitor industry was the major force behind the rapid growth. The county visitor count for 1984 should reach two million for the first time, or be very close to that figure. And visitor expenditures could approach $1 billion if not surpass it for the first time.

Added to this surge in tourism are generally excellent results in sugar, pineapple, and diversified agriculture. Sugar production was helped tremendously by the dry conditions, but probably at the expense of another good crop in 1985. Although sugar yield is helped by dry harvesting conditions, growing cane needs a lot of water.

The drought had an adverse impact on diversified agriculture, but production this year should surpass that of 1983. The spotted wilt virus has been discovered on Maui. As it could devastate whole fields of crops, Maui farmers are deeply concerned. A happier note from Kula is that farmers have begun to organize into commodity groups to increase their efficiency in marketing.

Construction is the one sector that is lagging the rest of the county economy, due to the strike called by the construction trade unions. With many projects ready for construction, the high cost of funds and difficulty in securing financing have also stalled the industry.

Maui County's exceptional economic performance this year is confirmed by several indicators. Gross Business Receipts, the broadest measure of economic activity and a scorecard for total business transactions in the economy, is running ahead of 1983 by 16.2 percent (see Figure 1). The annualized figure, based on monthly totals for the first nine months, shows the year's receipts reaching $1.6 billion, up from $1.4 billion for 1983.

State tax collections, annualized using first nine-month figures, were ahead by 9.7 percent to $74.9 million (see Figure 2). The rate of unemployment for the same period was down to 6.9 percent compared to 7.9 percent in 1983 (see Figure 3). Westbound visitor arrivals for the county will likely surpass 1.9 million. With eastbound figures added, the total could well reach two million (see Figure 4).

FIGURE 1
GROSS BUSINESS RECEIPTS
MAUI COUNTY
1970-1984*

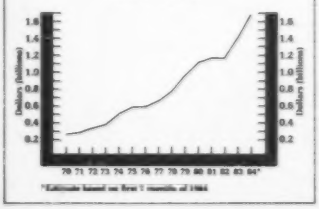
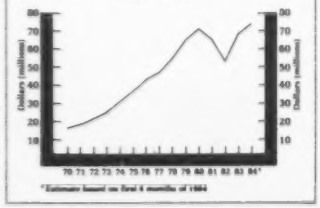


FIGURE 2
COUNTY TAX COLLECTIONS
MAUI COUNTY
1970-1984*



The Maui visitor market no doubt is being aided by the direct flights from the Mainland, which got into full swing this year. United Airlines has five direct flights to Maui from the Mainland. American Airlines will inaugurate its direct-to-Maui service on December 15. Delta Air Lines has also announced that after it starts its Dallas-to-Honolulu direct route on December 14, it will look into a direct route to Maui.

FIGURE 3
UNEMPLOYMENT RATE
MAUI COUNTY
1970-1984*

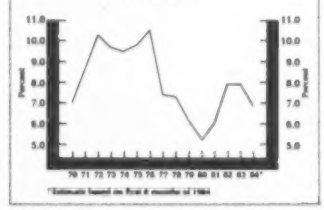
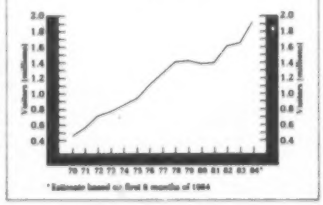


FIGURE 4
WESTBOUND VISITORS
MAUI COUNTY
1970-1984*



The entry of overseas airlines to the Maui market has strained the capacity of the Kahului airport terminal, which was designed for interisland needs. Although a new terminal building is being planned to replace the present structure, the conceptual design of the new terminal proved to be inadequate after direct flights from the Mainland started last year. The increase in the number of flights from the Mainland and the larger aircraft required for those flights forced a change in design, and it will be another year before the design is completed. If everything goes as planned, construction can begin in 1986.

Rapid growth of tourism has had a favorable effect on retail sales. Last year, retail sales climbed to $467.3 million, an increase of 12.6 percent over the 1982 total. The pace this year has been faster, with the year's total estimated at $610.5 million based on sales for the first eight months. This would be a 16 percent increase.

The visitor increase is also confirmed by the movement of surface freight. Matson Navigation Co. figures show that the volume of refrigerated cargo coming to Maui is directly related to visitor arrivals to Maui. Perishable cargo that Matson carries westbound to Hawaii grew from 2 to 4 percent annually for the state as a whole. But for Maui, the growth this year is running at a 22-percent rate, mainly due to the foodstuffs and equipment being shipped to hotels. Dry cargo for Maui is also the highest among shipments to the state, with annual increases of 8 percent while volume for the state as a whole stood at 2 to 4 percent annually.

The continuing growth of the economy keeps the county busy expanding its infrastructure to meet the needs of an increasing population and new businesses. The Napili-Honokowai sewer system is being built, and will be tied to the Lahaina Sewer Treatment plant. When this system is completed, the private Kapalua system will be tied in to the county system.

In the central valley, the Paia sewer system's preparation

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station is under construction, while the collection line will be built as soon as the bids are awarded.

The county is also going through with the revision of its community development plans, as mandated every ten years by the Master Plan. Revisions have been completed for Molokai, Lanai, Kahoolawe, Lahaina, Hana, and Paia.

Public hearings for the Kihei community plan were completed recently, and it will go before the County Council for final action. Revision of the Wailuku-Kahului and Upcountry community plans remain on the Council's agenda.

Maui's tremendous economic growth over the years can be traced to the vigorous and creative leadership that has been provided by those both in the public and private sectors, who have worked for the good of the community.

One of the better examples of this leadership is the organization of the Maui Economic Development Board. The concept of providing more jobs and better career opportunities for the next generation grew rapidly because the board was able to get the entire community involved—the county administration, the county council, and those in private business and professions.

Other examples of innovative leadership at work in Maui County are: (1) the creative marketing of Maui by the Maui County Visitors Association; (2) the county's innovative housing program that has been providing homes for low and middle-income families; (3) high-tech agriculture as seen in the NifTAL project, the new high-tech hydroponics enterprise of CEF Ltd., and the new high-tech shrimp culture of Orca Seafarms Inc. on Molokai; (4) growing leadership in diversified agriculture, which is helping farmers increase efficiency in marketing; and (5) the innovative marketing of diversified agriculture by the Hawaii Tropical Plantation.

THE VISITOR INDUSTRY

Maui County is having a tremendous year in tourism. Westbound visitor arrivals for the first nine months—annualized—are close to 1.9 million visitors for the year. With the addition of eastbound visitors, the year's total could well reach 2 million compared with 1.6 million westbound in 1983.

With such a crush of visitors, it was not unusual for many hotels to have sold-out days even during normally slow seasons. The occupancy rate for the first nine months averaged 81.9 percent, a rate not achieved in the past 15 years (see Figure 5). The reason for the tightness is that, while the number of visitors jumped 37 percent in the past three years, the number of hotel units increased only 18 percent (see Figure 6).

FIGURE 5
HOTEL OCCUPANCY RATE
MAUI COUNTY
1970-1984*

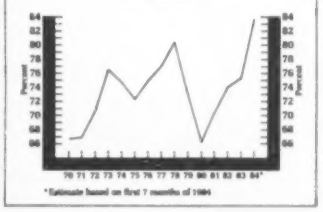
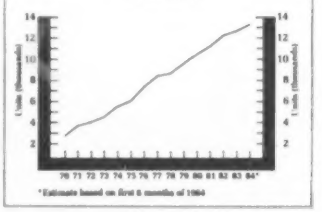


FIGURE 6
HOTEL INVENTORY
MAUI COUNTY
1970-1984*



This tremendous increase in visitors apparently means that many tour groups have been coming to Maui this year. The Maui County Visitors Association (MCVA) has not gone after this group for years. Instead, it has pioneered the concept of target marketing by concentrating in attracting those in the upper income strata. Maui room rates are the highest in the state, but the kind of visitor Maui desires—the golfer, honeymooners, tired businessmen, and young affluent families—are flocking to its shores. As the Mayor says, "Maui is a special destination area that has been planned well and is of high quality. We would not do anything that would detract from its beauty."

Maui's three premier resort areas of Kaanapali, Wailea, and Kapalua are doing well this year.

The Kaanapali hotels as a group have had a solid 90 percent occupancy for the first nine months of 1984. With visitor numbers bumping against total room capacity, arrivals cannot increase until inventory is replenished.

Amfac Properties has five to eight more ocean front lots for hotel development in Kaanapali, but there are no plans at present for a hotel project. The airstrip that runs along the shoreline must be removed before any work can begin. Amfac is thinking about even more luxurious hotels for that north end of the property when the time comes for development.

Alexander & Baldwin Inc. once again has full ownership of Wailea, having bought out the interests of its former joint partner, the Northwestern Mutual Life Insurance Co., last July for $30 million.

An exciting project at Wailea that is going through the permit process is a condominium-tennis complex in which 35 tennis professionals would make a circuit of four or five such resorts around the nation. The Grand Champion Resort Development Corp. of Scottsdale, Arizona plans to build 188 condominium apartments for the guests who can take lessons from the pros, play in tournaments, or watch the pros in exhibitions. This project will be on 24 acres adjacent to the Wailea Tennis Center.

Plans for the fourth condominium village in Wailea, to be known as Wailea Point, were also advancing through the permit process. Clyde A. Wagner, former Mainland developer and now a Wailea resident, purchased 26 acres for the 136 luxury condominium apartments he will build.

The two hotels within the Wailea resort have reported a good year, and have been enjoying occupancy rates that are among their best. The Wailea Development Co. has two more hotel sites within the resort, and developers have shown interest in them. One of the sites may be sold next year. With the increase in visitor activity, Wailea's two golf courses have been very active, and they will approach 90,000 rounds of play this year.

The Kapalua Bay Hotel, which has experienced some lean years, is having a much better year with occupancy running around 75 percent for the first nine months of 1984. It is starting a $1.5 million refurbishment program for the majority of its rooms. The hotel, except for the villas, will be closed for six weeks during the program, which is expected to be completed by next July. It takes time to build a clientele that returns annually to the same resort, and further progress has been made at the Kapalua Bay Hotel in the last year.

The Kapalua resort annually puts on the Kapalua International golf tournament with some of the top professionals playing for prize money which this year totaled $450,000. It was broadcast live during the three days of the tournament, and has been an excellent marketing tool.

A new kind of resort for Maui, and in fact the entire state, will make its appearance when the 82-room Hotel Hana Maui is transformed into a luxury hotel with a Hawaiian atmosphere by Rosewood Corporation, which purchased the hotel and Hana Ranch Inc. last July. In addition to improving economic opportunities for Hana residents, the new owners want to strengthen its ties to the Hawaiian community, and help preserve the heritage and natural beauty of the area. Rosewood Hotels picked Carl Lindquist to carry out this task. A publisher for most of his career, he was chosen for his personal ties to the area and its people.

The hotel is planning to serve an all-fresh menu, which would require working with Hana people who will supply them. It will also serve its own beef from the ranch as an option for guests, and is looking hard at botanical and aquacultural projects.

For the hotel, all rooms will be remodeled incrementally at a cost of up to $7 million—a three-year project. The grounds will be turned into a tropical garden. Arts, culture, and gardens will be emphasized in its marketing, and an artist-in-residence series is planned. There are 107 employees, and many of them will be trained in Rosewood hotels on the Mainland to raise service to luxury standards.

Condominium apartments in the rental pool play a more significant role in Maui County than in any other. Maui island alone has 6,817 condo units in the rental pool, which is 53.7 percent of total visitor accommodations on the island. No other county comes close. For Maui, about three-fourths of all condo units are in the rental pool and the number stays relatively stable.

Condos require a minimum four or five days stay per visitor,

and rates are high. But there is good demand from older people, those who want to escape the cold in winter, and families in summer.

Many condo units were not occupied during the bleak year of 1982 and partially in 1983. But it was a different story this year, with most of them approaching capacity. A strong beneficiary of this upswing was retail business. A survey showed that 43 percent of those at the Whalers Village shopping complex in the Kaanapali resort were not hotel guests. Presumably, they were mostly guests at condominium apartments.

THE SUGAR INDUSTRY

In 1984, the sugar industry on Maui suffered through one of the worst droughts ever recorded on the island, which will have an adverse impact on the 1985 and 1986 crops. On the brighter side, the 295,000 tons of sugar that the three plantations will produce in 1984 is the best crop since the 303,000 tons produced in 1966. The dry weather brought ideal ripening and harvesting conditions, resulting in very high yields for this year's harvest. The 1983 crop totaled 285,000 tons of sugar.

Hawaiian Commercial & Sugar Co., Hawaii's largest sugar plantation with 35,500 acres of cultivated fields, produced a record crop of more than 223,000 tons of sugar. Actually, the 1984 crop was 220,600 tons, still a record, and the remainder was from the 1985 crop, fields which were harvested early to save the cane dying from the continuing drought.

The plantation normally gets 130 million gallons of water a day from ditch flow originating in the East Maui mountains. It needs a minimum 300 million gallons a day for irrigation, with the requirement above the ditch flow coming from wells. But for several months, the ditch flow was down to 11 million gallons a day, of which three million gallons are required for its factory operations, and six million gallons are drawn by the county. The remainder was used to irrigate the higher-elevation fields, and that is a fraction of normal irrigation requirements.

Lack of rain has also reduced drastically the hydroelectric power normally generated for its own use and for delivery to Maui Electric Co. Since it has a firm power contract, HC&S has had to burn oil to supply the volume of power called for in the agreement.

The water situation was similar at Pioneer Mill Co. It requires about 100 million gallons a day for irrigation, with half supplied by ditch flows and the remainder by wells. Its major surface water source in Honokohau Valley normally flows at a rate of 30 million gallons a day. But for many weeks it was down to 1.5 million gallons a day. Other ditch systems were similarly affected. The drought also prevented planting for a while.

However, the dry weather has helped Pioneer Mill produce 54,000 tons of sugar this year, up from 52,142 tons last year. Yield for the year was running at 14.44 tons of sugar per acre through early fall due to ideal dry weather for harvesting and good moisture conditions in 1982 and 1983. Since the drought in West Maui didn't begin until after Christmas of last year, Pioneer Mill is looking for a good 13.84 tons of sugar per acre for 1985, although a continuing drought will chop that yield. The results are excellent considering that Pioneer Mill was hit by smut disease, and affected fields had to be replaced by a more resistant variety over a two-year period. This plus the drip irrigation system and good cultural practices were responsible for the improvement.

Wailuku Sugar Co., which hasn't had a loss since 1979, will end up with a small profit again this year on an output of 21,300 tons of sugar, up from 20,599 tons last year. The yield this year of 13 tons of sugar per acre is the highest in the past 18 years. The plantation attributes the good record to its quality circle program that has been in effect for a few years.

Wailuku Sugar has 1,500 acres planted in macadamia nut trees on former sugarcane land. The program will be complete when it puts in another 270 acres of saplings next year. It harvested 40,000 pounds of nuts last year, and this year's crop will reach 150,000 pounds.

THE PINEAPPLE INDUSTRY

Results for the pineapple industry in 1984 ranges from excellent on Maui, to stable on Lanai, and lowered production on Molokai, to be discussed in the Molokai section.

Castle & Cooke's Lanai plantation was reduced in acreage a few years ago to 12,000 acres, with some marginal land being fallowed. The company invested in a drip irrigation system for some of the better yielding fields, and production has increased. Production will increase this year, but a decline is forecast for 1985 due to the marginal land not being planted three years ago. Fruit tonnage will begin to rise again in 1986.

Maui Pineapple Co. is having an excellent year in 1984. Crop yields have been very good. The cannery has operated efficiently with good productivity. The recent drought has had some effect this year, but drip irrigation systems in most of the fields have mitigated the impact. The company is not sure how the recent dry weather will affect its 1985 and 1986 crop yields.

Marketing conditions have also been good this year, partly due to the adverse conditions in other growing areas. Thailand suffered a drought two years ago, and the Philippines also has had poor weather. Both are major growing areas. This combination of conditions on Maui and the rest of the world resulted in stable market conditions and reasonable price levels for Maui Pine.

Maui Pine has built its fortune in the private label market. It is the largest supplier in this market, and has 60 major customers—the largest accounting for only 5 percent of total sales. It employs 900 workers, and another 900 during the busy harvest season.

DIVERSIFIED AGRICULTURE

Farm sales of diversified crops and livestock for Maui County reached a record $28.9 million in 1983, an increase of 13.5 percent over 1982. The total was made up of $16.5 million in crop sales compared to $14.1 million in 1983, and $12.4 million in livestock sales, up 8.9 percent over 1983.

Diversified crops were aided by a large increase of 26.4 percent in sales of vegetables and melons totaling $8 million, and a big gain in the sale of flowers and nursery products amounting to $4.5 million. Gains in livestock sales were due mainly to a 14.1 percent increase in the value of cattle sales, which reached $6.9 million.

Despite the record year, farmers are concerned because the spotted wilt virus that attacks leaf crops has been found on Maui. Unless controlled or eradicated, this virus can devastate entire fields.

Diversified agriculture in Maui County is taking on a new look as new concepts such as high technology agriculture begin to sweep away the traditional ways of raising food. There are three significant projects of revolutionary proportions now underway. They are the controlled greenhouse vegetable culture in Kula, the NifTAL project in Hamakuapoko, and the salt-water shrimp culture on Molokai to be discussed in the Molokai section.

CEF Ltd., doing business as Controlled Environmental Farming, has introduced high-tech into the greenhouse in a way that may spell the difference between a successful farming operation and a profitable one. The partnership invested $1 million in research, and has developed a greenhouse that keeps insects and other pests out, takes advantage of the great growing climate, and uses a computerized feeding system for the plants. Each greenhouse is 4,000 square feet in size, and by the end of the year, the group will have 17 greenhouses in place and in operation. The greenhouses and other materials will cost $1 million.

When in full operation, the farm hopes to be producing 300,000 pounds of vegetables annually. Crops include tomatoes, lettuce, cucumbers, watermelons, peas, beans, herbs, and strawberries. This volume is forecasted to replace the portion of Maui demand that is made up of imports from the Mainland.

CEF Ltd. is planning to develop a similar farm on Oahu in 1985, and reduce the huge imports of produce that cannot be supplied locally. The greenhouses are expected to be from 10 to 20 times more productive than traditional farming, and will require 75 percent less water. To achieve this kind of productivity would require between one and two acres in the open field compared to the 4,000 square feet in one greenhouse.

The plants are grown in plastic bags filled with cinders. Water

and nutrients are fed through a drip system which is computerized to obtain the optimum benefit for the plants. Basically, the medium is kept moist continually. This forced feeding of plants results in rapid growth. For example, tomato plants grow from seedlings to the harvest stage in 60 days compared to five or six months in the open field. The plants are attached to strings running down from the ceiling so that they grow vertically. This increases productivity.

If this new hi-tech agricultural concept works, and it looks very encouraging so far, diversified agriculture may finally make a dent in growing Hawaii's own food, rather than importing it.

The NifTAL project on the former grounds on Maui High School has been operating quietly since 1975 to help Third World nations increase high protein food production with reduced use of costly nitrogen fertilizers, whose production base is petroleum.

Following the first oil shock in 1973, the United States through its Aid for International Development (AID), decided to help Third World farmers by encouraging the growth of legumes because of their ability to fix nitrogen biologically in the soil.

The University of Hawaii won the contract. The College of Tropical Agriculture and Human Resources established a financially autonomous unit on Maui in 1975 called NifTAL, which stands for Nitrogen Fixation by Tropical Agricultural Legumes. The project is run entirely on contracts and grants, mainly from the federal government. There are 75 on the staff, 50 of them on Maui and the rest scattered around the world. Sixteen have Ph.D.s and more than 20 have master's degrees. It operates on a budget of approximately $1.6 million a year, and is the largest hirer of college graduates on the island.

Maui has proven to be an ideal place for this research compared to the Mainland. There are different climatic conditions from sea level to the 10,000 foot elevation of Haleakala, and research can continue year-long.

Different varieties of beneficial soil bacteria (rhizobia) that are needed to fix nitrogen in the soil have been developed and tested to fit the various conditions in Third World countries to get optimum results. So far, 1,774 strains of rhizobia are in the project's collection. They were isolated from different legume species collected in 56 countries.

Since the rhizobia deteriorate unless kept under a low temperature, commercial plants have been built to produce rhizobia in India, Pakistan, Thailand, and Zambia. Field tests have been conducted with scientists in 53 countries. Over the past eight years, many scientists in foreign countries in this program have been trained by specialists on Maui or in their own countries. Farmers in Third World countries are being taught about the advantages of this program, and the demand for commercial rhizobia has been increasing.

Ron's Nursery in Kula, the state's largest grower of flowers, is changing direction as competition in this commodity gets tougher with new entrepreneurs entering the field. For many years, flowers accounted for 80 percent of revenues. It will be down to 65 percent this year and eventually to 50 percent.

Flowers are being replaced with onions and agricultural consulting. The big push will be in greenhouse-grown Maui onions, which are not marketed as a vegetable any more, but as a tourist souvenir of Maui. With the increase in direct flights to the Mainland, many visitors will want to take something of Maui back with them.

The nursery will package a two-pound plastic bag of Maui onions and market them as an airport item, which visitors can buy at the last minute, and carry them aboard the plane. Ten-pound packages will also be available.

The plant and foliage business is also expected to show good growth this year and next with large demands for landscaping. Hawaiian Foliage and Landscaping Inc. has the contracts to landscape the Lihue, Keahole, and Maui airports, plus the Seibu project in Makena, and the Waikoloa Shores on the Big Island.

Another new enterprise that is marketing diversified agriculture in an innovative manner is Hawaii Tropical Plantation at Waikapu. Sixty acres of former sugarcane land has been converted into an oasis of tropical plants such as banana, sugarcane, pineapple, papaya, macadamia nut, taro, and other exotics.

A train takes customers on a tour of the plantation, with stops for tastes of the different tropical fruits. This is the educational part of the theme park that is geared toward visitors. There are other exhibits in the main building, which also has a restaurant serving many of Hawaii's tropical fruits, prepared in different ways. A shop sells Hawaiian products.

The park was opened in September, and attendance averaged 1,500 daily in the beginning weeks. The firm has 75 employees plus some part-timers. Being visitor-oriented, the peak corresponds with the visitor seasons.

Raising and marketing of proteas in Kula are improving slowly as customers become more familiar with this exotic flower. A native of South Africa, proteas do well in the higher altitudes of Kula.

The Protea Cooperative of Hawaii represents close to half of the growers, who have a total of close to 30 acres in different varieties of the protea. It takes a grower five years to break even, so capital requirements are high to get into this business.

The cooperative ships about 85 percent of its production to the Mainland and a small amount to the Orient. The Mainland market is unlimited for the near future, but competition is beginning to increase from South Africa, Israel, Mexico, and South America. South Africa shipped most of its production to Europe in the past, but has discovered the Mainland market. Competition closer to home is San Diego, where growers are beginning to make a dent in the market.

The Maui cooperative stresses quality, sometimes to the distress of growers, but the reputation that has spread among buyers gives Maui the high tier of the market. The most popular varieties are the King's Mink, Sunburst, and Banksia. Shipments are by air freight, parcel post, and courier service. The cooperative has built a new packing and administrative building next to Kula Lodge, and also has a small retail shop on the highway. About 50 are employed in packing the flowers for shipment. New fields of protea have been planted, and in a few years, the cooperative will be handling an increasing volume of exports.

Another temperate zone product that is making Kula famous is wine from the Tedeschi Vineyards and Winery. The 1984 crop totaled 74 tons, almost double last year's 40 tons. The winery produced 6,500 cases of champagne. Fourteen acres of Carnelian variety grapes were planted in 1978, and a ton of grapes was harvested in 1980. The crop has been increasing gradually as the vines matured. Another six acres were planted last year, and they should bear their first fruits next year.

Orders for the champagne have been good, but the supply is small. They are marketed mostly on Maui and Oahu, with some going to the West Coast and Texas. The last of the 1981 vintage was released recently.

When the new fields begin bearing, production should increase significantly, beginning in 1986. The company is planning to penetrate the local market more fully as production grows before extending its marketing overseas.

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Another exclusive Maui product is rum. Maui Distillers began production in 1981, taking over the plant given up by Seagrams some years ago. It buys molasses from Hawaiian Commercial and Sugar Co. This raw material is pumped to the distilling plant located next to the plantation's Puunene factory.

The major product is rum, and a secondary output is cane neutral spirits, which is supplied to hospitals for their medical requirements. The rum is shipped in 5,000-gallon tanks to the Mainland for processing and packaging.

Seed corn research on Maui is being conducted by DeKalb Pfizer Genetics, one of eight Mainland firms that have research and development operations in the state. Once known as Pfizer Genetics, its research department was merged with that of DeKalb, another large seed company.

One of its new corn hybrids that it bred and developed a few years ago has turned out to be a winner, and millions of bags of that seed will be sold this year. The company has 86 acres on Maui that it can use for its research. But the company says that the total acreage this year was a 145-acre equivaient, based on the three crops of seed corn it produced, advancing the seed generations that much faster compared to the one-crop Mainland pace. DeKalb Pfizer employs a staff of 15 on Maui plus part-time help during the busy winter season.

Cattle sold by Maui Island ranchers during 1983 totaled 10.9 million pounds (live weight), an increase of 26.7 percent over 1982 sales. The value of 1983 sales amounted to $5.7 million, up 23.9 percent due to a slightly lower price last year. Molokai cattle sales totaled 2.4 million pounds, down 9.7 percent from 1982. The value of sales for 1983 was $1.2 million, down 14 percent. Sales of feedlot cattle came to 5.9 million pounds compared to 4.0 million pounds in 1982, with values of $3.4 million in 1983 compared with $2.4 million in 1982. Sales of range and other slaughter cattle from Maui totaled 5.0 million pounds, up from 4.6 million pounds in 1982. Value of sales came to $2.3 million in 1983, and $2.2 million in 1982.

Despite the favorable numbers, ranchers for some years have not been able to turn a reasonable profit due to high cost, such as for feed, and problems of marketing. Some ranches have started a breeding program to improve their herd.

Hana Ranch has a herd of 9,000, all Herefords. It purchased some Brahman bulls to begin a cross-breeding program. It hopes to produce a superior animal—one that gets bigger at an earlier age with a highly acceptable grade of beef. The Brahman, being a tropical breed, stays out and feeds even when it is hot while the Hereford tends to seek the shade when it gets too hot. This characteristic of the Brahman is what the ranch hopes to transmit to the new generation and increase productivity.

Hana Ranch is planning to finish some animals on grass supplemented with grain so that it can supply Hotel Hana Maui with its own beef. Most of the ranch's cattle are shipped to the Ewa feedlot on Oahu for finishing. Approximately 3,000 heads are marketed annually. The ranch has 11,000 acres of grazing land, and has 20 employees.

The 450-acre Kula Agricultural Park has finally opened, and a few farmers have started working their lots. It's been more than five years in planning and development since it was conceived. The park has 31 lots ranging in size from 10 to 30 acres. A committee carefully screens the applicants, who must have both farming and financial capabilities to qualify. There also must be a market for their produce. The lots are leased. This way the land will be in agriculture in perpetuity. If the farmer were allowed to purchase the land in fee, he probably would sell it to the highest bidder when he retires. As of October, two lessees were putting in vegetables, and the third was building a nursery.

Thoughtful farmers agree that water will be the limiting factor in Maui's agricultural future. This fact has certainly been brought home pointedly in the current drought that has hit the entire state. Maui has been hit particularly hard because its two biggest sources of surface water—the East Maui mountains and the West Maui mountains—have been reduced to record lows.

The county has contracted for a study by Belt Collins and Associates as to the feasibility of building a large reservoir along the high elevations of Kula to store water from mauka rain showers. The reservoir would be lined with a sealant, and be large enough to hold 300 million gallons. The county would like two such reservoirs to take care of emergencies that have hit Kula the past two years, and occur from time to time. One reservoir is estimated to cost $20 million.

For other areas of Maui, the county will put in wells to take care of their needs. Plans are advancing to develop wells in Lahaina, Keanae, and Hana.

THE CONSTRUCTION INDUSTRY

The long strike by the building trades unions in all the counties will result in a substantial decline in Maui County's construction put in place when the figures are compiled for 1984. The largest projects that have been affected are the Judiciary Building in Wailuku and Seibu's Maui Prince Hotel in Makena.

The value of residential permits issued in the first nine months of 1984 was 11.3 percent ahead of the 1983 pace (see Figure 7), but for nonresidential permits, the nine-month pace was down 63.8 percent (see Figure 8), with government construction contracts holding even with 1982 (see Figure 9).

FIGURE 7
PRIVATE RESIDENTIAL PERMITS
MAUI COUNTY
1970-1984*

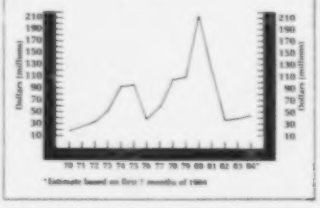
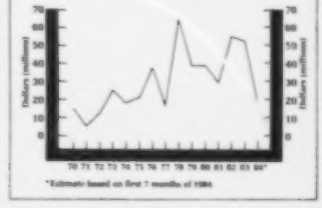


FIGURE 8
NONRESIDENTIAL PERMITS
MAUI COUNTY
1970-1984*



The lean times have forced contractors to cut staff to the bone. Maui Concrete & Aggregates, for example, has been forced to cut 250 from its payroll down to 30 employees during the strike. But rehiring prospects for workers are not promising because contractors don't see a good building year until 1986. As one said, they won't see another building boom like the 1970s again (see Figure 10).

Maui County, which has been known for innovative programs to provide low-cost housing to low and middle-income families, has come up with another program that is benefiting low-income families. This is the experimental housing program, permitted under Section 46-15, Revised Laws of Hawaii, in which the builder need not conform to normal building standards. The county worked with Molokai Ranch Co. to subdivide the former Del Monte employee homesites using this provision of the law. Minimum subdivision requirements were waived by the County Council, and the homes were sold to the workers at very reasonable prices.

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FIGURE 9
GOVERNMENT PROJECTS
MAUI COUNTY
1970-1984*

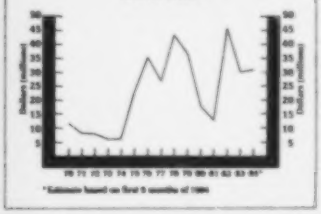
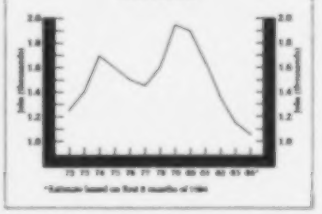


FIGURE 10
CONSTRUCTION JOBS
MAUI COUNTY
1970-1984*



The county has proposed to Molokai Ranch Co. a similar subdivision of Maunaloa Village so that those homes may be sold to families residing in the former Dole employee village. The county would also expand Maunaloa by 110 acres if it can exchange its 110 acres at the entrance to Kaluakoi for a similar sized area next to the village with Molokai Ranch. It would be able to build 63 homes under the same program for low-income families.

In the public works area, the county is going to float $25 million in general-obligation bonds to finance the construction of the $8 million new police station, $1.7 million for road improvements on Lanai, construction of the Paia sewer, and other projects.

The conceptual design of the new air terminal at Kahului Airport has been put on hold because the proposed entry of new airlines and the numerous Mainland-Maui direct routes, both planned and in service, have made plans obsolete. A new design to take care of current and future needs is now being drawn up.

The proposed construction of the airport on West Maui has been straightened out. Royal Hawaiian Air Service had an agreement with Maui Land & Pineapple Co. for a tract of pineapple land at Mahinahina for the airstrip. However, Royal Hawaiian Air wanted exclusive rights to the airport. Maui Land, fearing an antitrust violation, decided to let Hawaiian Airlines develop the airport with the understanding that other airlines may use the terminal also. The length of the proposed runway will restrict usage by jet transports.

The only hotel under construction on Maui is Seibu Hawaii's Maui Prince Hotel at Makena. It will be a 304-room luxury hotel. Work was 30 percent complete and on schedule until the strike by the building trade unions stopped all construction. Its scheduled opening was in the fall of 1985. Marketing will be Mainland oriented.

Over in Lahaina, plans to build a shopping center in the shell of the old Baldwin Packers pineapple cannery have been changed due to a new federal flood-control requirement. The new rule requires the floor to be raised, and the county wants some land in the front for road widening. Since the framework was rapidly deteriorating, Hawaii Omori Corp., the developer, decided to tear down the old framework, and build a replica of the old cannery so that it meets federal and county rules. The center will be on 14 acres of land, and will have 125,300 square feet of leasable space. Cost of the project is estimated at $14 million by the company. Depending on preliminary work including permit revisions, construction could begin in the summer of 1985. Hawaii Omori has signed leases with Longs Drugs and Safeway Stores, the latter for 34,000 square feet. Other leases were to be signed shortly.

HIGH TECHNOLOGY INDUSTRIES

The County of Maui is leading the way in seeking the kind of economic diversification that would bring not only more jobs for its young people, but also better career opportunities. The effort began with the Mayor appointing an advisory committee on Maui's economic future in 1981 followed by a symposium later that year at Kapalua to see what alternatives and opportunities Maui could exploit.

The committee was able to get Donald G. Malcolm, an engineer and Dean of the School of Business at California State University-Los Angeles, as its president. Initial funding came from the county and business firms on Maui. The Maui Economic Development Board was organized in April, 1982.

One of the first objectives of the board was to develop a quality research and technology park, and then invite companies that would be able to operate profitably from Maui as their base.

The board decided that it should develop the park first because a company that was interested could begin operations almost immediately. Otherwise, it may take up to five years to go through the permit process. The park would be zoned commercial so that no company locating here would have to go through the time-consuming process.

The board decided to develop a site at Kihei. The Kihei Community Plan was being revised by the county at that time, and the board proposed that the site be included in the revised community plan as a hi-tech park. The County Council committee that was holding the hearings approved the inclusion of the site in the revision. Because the committee makes up the majority of the Council, the site, in effect, has been approved for inclusion in the revised Kihei Community Plan.

The board promptly asked the State Land Use Commission for a change in the use of the land. It has also moved swiftly to find a developer who had the financial capability to develop the project on his own. The board chose Joel Smolen of Gilroy, California.

He will buy the land and develop it, keeping within the standards set by the board. He will put in the infrastructure, and be responsible for marketing. The board will support the developer fully.

An ordinance that would establish the authorization for a research and development park was being considered by the County Council. The ordinance would establish the process of application and approval, and would streamline the permit process.

The developer would first submit his concept for the park. When this is approved, the builder will bring in the plans, bypassing the subdivision and building permit processes.

The board has decided on a lushly landscaped, campus-like environment for the park, with buildings to be kept low with plenty of space in between. This is in keeping with other successful R&T parks on the Mainland. If the board has its way, the park would be filled with research and software development firms.

The lack of higher education for the needs of those employed in the park and for young people aiming for such a career was of some concern to the board. It will attempt to overcome this deficiency by improving the curriculum in the public schools and at Maui Community College. Professional level seminars are also being considered as are management training and the invitation of technical specialists with high skills.

The successful accomplishments so far of the Maui Economic Development Board can be credited to its determination to get the community involved. The county administration, the County Council, business and professional people, and all others who can contribute to the effort were sought out to join the organization.

Eight continuing action panels were organized to seek solutions to the needs and problems of Maui. These panels are keeping the entire community in action and informed about the steps being considered to get Maui ready for a high technology future.

RENEWABLE ENERGY

Maui does not have the extent of renewable energy resources that the Big Island possesses, but it is making every effort to develop what the island has. The sugar plantations have been for many years generating power by burning bagasse and by hydroelectric means. Today, Hawaiian Commercial and Sugar Co. supplies Maui Electric Co. with 12 percent of the power it distributes throughout the island. Maui Electric distributed 490 million kilowatt hours of electricity in 1983, and it estimates the total will be 525 million kilowatt hours in 1984.

Maui Electric is very interested in developing the geothermal resource that appears to be present along the fault line that stretches down from Ulupalakua Ranch headquarters to the sea. Geologists have estimated that there is sufficient steam at one of the better sites to make it a 50-megawatt source.

Before any drilling, the State Board of Land and Natural Resources, which held a public hearing earlier, must decide

whether to approve a subzone below Ulupalakua for geothermal development. Then the county must pass an ordinance before work can start. The earliest that drilling can begin probably is next summer. Maui Electric is hoping for enough steam for a 12-megawatt power output.

The county earlier this year designated a 107-acre area at Maalaea as an energy park, where developers can build or experiment with alternate energy plants. A Mainland developer has received approval to build a 340-kilowatt windmill next to Maui Electric's generating plant.

Like the other counties, Maui has been looking at the possibility of producing power by burning the refuse it collects every day. One problem is that the volume may not be sufficient to keep a generating plant in operation unless it is supplemented by wood chips or bagasse. However, the Mayor is hopeful after attending a conference in San Diego, and sent two engineers to another conference to check out the potential for Maui.

ASTRONOMY

Science City, on top of 10,000-foot Haleakala, is the second of the University of Hawaii Institute of Astronomy's world-class sites for the study of space.

The institute has two ongoing projects in Science City. Its solar physics department's Mees Observatory does solar research. The Lure Observatory has a laser ranging program to check movements on earth.

In solar research, Mees scientists take pictures of sun spots simultaneously with a satellite in the sky to see which makes a better observation of that phenomenon.

In the lunar project, scientists try to hit a spot on the moon with a laser beam at the same time that nine other stations are doing that, and the beam that bounces back to earth provides data that can measure any movement of the earth's tectonic plates, such as under the San Andreas fault.

Other universities have also been using the research facilities at the observatory. The University of Birmingham, England, is studying solar oscillation, and has found that weather and atmospheric conditions are well suited for that study. The University of Texas is studying the light reflected off heavy particles in space. The University of Wisconsin is studying low-light levels in association with the Department of Energy. Purdue University is also involved in this study.

Science City is probably more important to the Air Force which is involved in the spacecraft surveillance program. It has more than 200 persons working on the summit daily, and there is a possibility that the Defense Department may expand its research on Haleakala. The institute employs about 16 people for its programs.

CONCLUSION

Maui County has established an enviable economic growth record that can be credited to creative leadership at both the public and private levels. In spite of the high level of achievement, its leaders are not resting on their laurels. Innovative ways of striving for new goals, and making work more productive are flourishing in the county.

Maui is taking the lead in creating new economic opportunities so that the coming generation need not leave home to fulfill their career goals. The formula for this success so far is a leadership that solicits the participation of all who can contribute to the effort. In creating this degree of cooperation, Maui is succeeding in mobilizing resources in a way that could be an example to the other counties.

MOLOKAI

Molokai is emerging from the crisis of 1982 when Del Monte, after several years of indecision, announced it was getting out of the pineapple growing business on Molokai, and Molokai Electric Co.'s brand new biomass power plant broke down, with repair estimated to take a year or longer. Unemployment that year was 15.4 percent, and shot up to 20 percent in 1983.

All of these adversities have been reversed. Del Monte Corp. has decided to continue farming on Molokai indefinitely, and Molokai Electric, which faced bankruptcy or voluntary reorganization, picked the latter route as the choice of the creditors. A new management committee, with tremendous cooperation from creditors, is turning the utility around. The unemployment rate, although still high, has been reduced to 16.4 percent in the first nine months of 1984.

The visitor industry is doing much better this year as part of the general resurgence throughout the state. But more important, the industry has received funds for the first time from the state ($100,000 on a matching basis) and the county ($50,000) to promote Molokai. The industry group—Destination Molokai—has committed $60,000 for a joint promotion of Molokai with United Airlines and Maui County.

The Sheraton Molokai Hotel, the largest on the island with 300 rooms, is experiencing an upsurge in visitors. A major source of guests is from the other islands, largely Oahu. They account for up to 40 percent of the guests, who stay longer than at any other Sheraton hotel in Hawaii. Sheraton has nearly half of the 628 visitor accommodations on the island. There are six other hotels and condominiums, ranging in size from 43 to 83 units.

A 375-room luxury hotel has been proposed for development south of the Sheraton Molokai on the west end of the island by Kaiaka Associates, a limited partnership. The cost is estimated at $85 million. The project is in the initial stages of the permit process, and it will be some months before construction can begin. The development will be on 22 acres of land owned by Kaluakoi Corp., which has 6,800 acres of land in that area.

Besides tourism and government, agriculture is the other base of the economy. With the phasing out of a large part of the pineapple industry beginning in 1975, large tracts of land reverted back to homesteaders in the Hawaiian Homes tract at Hoolehua. At that time, around 25 acres were being farmed by homesteaders, but this has grown to 300 acres today. Another 300 acres are being farmed in the county-sponsored agricultural park south of the airport, and adjacent to that, 60 acres of state land is in agriculture.

Shipments of all produce to Honolulu, including cattle, went from 2.4 million pounds in 1980 to 6 million pounds in 1983, according to the University of Hawaii Extension Service. Another increase is expected for 1984. Value of sales went from $1.1 million in 1980 to $2.3 million in 1983.

Today, Molokai is the state's leading producer of string beans (58 percent), bell peppers (39 percent), sweet potatoes (79 percent), and watermelons (63 percent).

Farmers have worked with Oahu wholesalers, who have cooperated in improving the marketing for Molokai produce in Honolulu. Growers have developed a consistency of supply, maintaining a flow to Honolulu when the Mainland supply is low, and shifting to other crops when imports increase.

The twice-weekly barge service to Honolulu has worked well for the farmers' needs so far. The farmers are planning to build a forced air cooling plant that would keep crops like beans, watermelon, and eggplant in fresh condition prior to shipment.

The presence of Del Monte is not as important in terms of employment as it was in the past, but in the stability it brings to agriculture on Molokai. Employment today is down to around 100 due to drought conditions. A few years ago, more than 200 full-time employees were on the payroll. The fields have been cut by a third to around 2,000 acres, leased from Molokai Ranch Co.

The decision to remain on Molokai was due to the advanced drip irrigation system developed there several years ago, in which nutrients are applied through the drip system. When EDB was banned, the residual effect of the new fumigant was found to be much shorter. But the new fumigant can be applied efficiently through the drip system for as long as required, and Molokai was equipped with a large proportion of drip. Therefore, Del Monte reduced the acreage on Oahu, and kept Molokai in operation.

In a fresh fruit operation, appearance is all important, so not all of the fruit meet the standard. Fruit that is not ideal for the fresh market will be processed in Honolulu as frozen pineapple products for export, and the remainder will be processed into juice concentrate at Del Monte's new processing plant at Kunia.

Seed corn research, which got started in the state in 1967 on Molokai, is a thriving business on the island. Hawaiian Research Ltd. and Holden's Foundation Seed Inc., which are related firms, farm 300 acres, and Funk Seeds International, about 60 acres.

A very successful project, now in its seventh year, is the learning center run by the Molokai Hawaiian Academy of Knowledge for high school students, who are unable to learn in the traditional environment due to behavioral or social problems. The curriculum consists of courses that will lead to a high school diploma, but more importantly, skills in agriculture and aquaculture that would lead to subsistence or a profitable enterprise following graduation. The classrooms are at the Kilohana Community Center and the hands-on training area is located at Keawanui where Kamehameha School/Bishop Estate has provided 100 acres of land of which 25 acres are now in use. Many of the students' families have ancestral lands where the skills can be put to use. Kamehameha Schools and the Department of Education provide the funds for this program, with additional support from community agencies.

The 76-acre fishpond at Keawanui is nearly restored, and students are learning to raise fish in the traditional manner combined with modern scientific methods. The results have been very encouraging. A majority of the students are meeting the academic requirements for graduation, transforming once-alienated young people into productive citizens.

Aquaculture got a big shot in the arm when Orca Sea Farms Inc. started a high technology ocean shrimp farming operation last year on 157 acres of Molokai Ranch land near the south shore west of Kaunakakai. Sections of the operation are being financed by limited partnerships.

Orca eventually hopes to market its research and development expertise, license fees, royalties, and technical consulting services. It employs 12 now, mainly technical people, but at full development, the facility will require 45 on the staff.

Shurei Hirozawa
Vice President
Marketing Division

Maui County Statistics

	Unit	Period	1979	1980	1981	1982	1983	Jan.-Sept. 1984	% change Jan.-Sept. 1984/1983	% change Annual 1983/1982
Population, Resident	number	July 1	68,900	71,900	75,600	79,662	82,700	n.a.	n.a.	3.8
Per Capita Personal Income	dollars	total	8,173	9,144	9,763	10,458	n.a.	n.a.	n.a.	n.a.
Civilian Labor Force	number	mo. avg.	34,050	36,650	39,050	42,200	43,300	43,550	−0.2	2.6
Employment	number	mo. avg.	32,000	34,750	36,700	38,850	39,850	40,550	1.0	2.6
Unemployment	number	mo. avg.	2,050	1,900	2,350	3,350	3,450	3,000	−13.0	3.0
Unemployment Rate	percent	mo. avg.	6.1	5.2	6.0	7.9	7.9	6.9	−13.7	0.0
Total Job Count[1]	number	mo. avg.	32,650	34,050	35,350	36,850	37,450	37,300	−0.9	1.6
Gross Business Receipts	mil. $	total	960.4	1,113.7	1,169.4	1,166.3	1,401.8	1,221.8	13.9	20.2
State Tax Collections[2]	thous. $	total	53,096	56,897	57,584	52,850	68,217	56,149	9.9	29.1
Total Bank Deposits	thous. $	mo. avg.	247,224	266,241	282,019	307,139	349,640	401,541	15.9	13.8
Debits to Demand Deposits	mil. $	total	2,787	3,077	2,955	3,112	2,997	2,488	9.7	−3.7
Estimated Westbound Visitors	thous.	total	1,420	1,378	1,380	1,608	1,696	1,407	9.8	5.5
Intended Length of Stay — Westbound	no. of days	mo. avg.	4.0	4.1	4.1	4.3	n.a.	n.a.	n.a.	n.a.
Hotel Inventory	number	June	9,654	10,483	11,245	12,278	12,680	13,336	5.2	3.3
Hotel Occupancy	percent	mo. avg.	73.0	66.2	70.3	73.9	75.2	81.9	7.1	1.8
Private Permits	thous. $	total	146,444	213,689	147,813	90,704	91,249	46,631	7.0	0.6
Residential Permits	thous. $	total	107,857	215,209	118,802	35,771	38,814	32,399	5.6	8.5
Single Family	no. of units	total	1,010	803	398	530	547	489	15.1	3.2
Multi-Family	no. of units	total	1,098	1,815	1,085	122	24	6	−72.7	−80.3
Non-Residential Permits	thous. $	total	38,587	38,480	29,011	54,933	52,435	14,232	10.3	−4.5
Public Contracts Awarded	thous. $	total	36,777	17,886	12,687	45,790	29,943	22,988	−9.7	−34.6
Federal	thous. $	total	1,572	3,400	1,007	12	106	0	−100.0	783.3
State	thous. $	total	28,420	13,181	7,364	18,374	22,423	12,498	−35.7	22.0
County	thous. $	total	6,785	1,305	4,515	27,404	7,414	10,490	87.0	−72.9
Real Estate Resales										
Single Family	number	total	221	189	148	103	185	155	6.9	79.6
Average Price	dollars	cum. avg.	159,094	169,191	181,889	134,969	155,095	180,572	13.2	14.9
Condominium	number	total	649	372	240	282	361	310	−2.2	35.1
Average Price	dollars	cum. avg.	137,000	160,000	167,000	153,000	151,000	143,856	−4.7	−1.3
Electricity Generated	mil. KWH	total	439	468	506	507	525	453	8.6	3.6
Telephone Access Lines[3]	number	end per.	29,065	30,921	32,725	34,629	36,549	37,993	6.0	5.5
Sugar Production, raw sugar (K)	thous. tons	total	253	266	255	235	287	263	4.8	22.1
Total Nonsugar Crops and Livestock	mil. $	total	55,264	58,502	64,790	64,045	73,969	n.a.	n.a.	15.5
Nonsugar Crops	mil. $	total	43,718	48,418	53,185	52,687	61,602	n.a.	n.a.	16.9
Livestock	mil. $	total	11,546	10,084	11,605	11,358	12,367	n.a.	n.a.	8.9

Refers to number of jobs rather than number of persons employed. Persons with more than one job are counted more than once.
[2]Totals do not include property taxes.
[3]Access lines represent the lines connecting customers to the network regardless of the ownership of the customer premises equipment.
n.a. = not available

RESEARCH DEPARTMENT
NEIGHBOR ISLAND PROFILES
NOVEMBER/DECEMBER 1984

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ECONOMIC INDICATORS

NEIGHBOR ISLAND PROFILES

MAUI COUNTY IN 1985

The most important news affecting Maui County's economy this year was the United Airlines (UAL) strike. Because of Maui's heavy reliance on United's five direct daily flights from the mainland, the strike's impact on Maui's tourism-dependent economy was especially severe. The loss of westbound visitors was estimated by First Hawaiian Bank at 36,378 persons. This represented a total expenditure loss of $39 million, and has effectively nullified what had promised to be a banner year for Maui's economy.

Prior to the strike, gross business receipts for the county were showing a strong 4 percent increase for the first five months of 1985. Total jobs in the county were also ahead by 6 percent, and the unemployment rate had dropped by 22 percent from 1984. Unfortunately, these trends were upset by the UAL strike, and the rest of 1985 will depend on the speed of tourism's recovery on Maui.

In agriculture, the drought of 1984 and renewed dry weather in 1985 have started to cut into farm yields. However, Molokai's diversified agricultural operations are still going strong, expanding their share of the state's produce market.

Except for increased building by the county government, construction on the Valley Isle is continuing to decline. Resales of single-family units are going well compared to a still depressed condominium market. The Kahului Airport expansion and West Maui airfield projects seem to be heading forward, and the Kihei Research and Technology Park took a major step toward becoming a reality, thanks to the efforts of the Maui Economic Development Board and a supportive county government.

MOLOKAI

On Molokai, diversified agriculture is king, with gross sales of $15 million enjoyed in 1984, and production of 6.3 million pounds of fruits and vegetables recorded, double the amount for 1983. The leaders in last year's bountiful harvest were watermelons and onions, green beans, sweet peppers, sweet potatoes, hay, alfalfa, and seed corn. Beef production has also been an important component of Molokai agriculture, with last year's sales recorded at $1.3 million.

Watermelon had a record year in 1984. The production of over 3.7 million pounds of watermelon in 1984 was over 154 percent higher than 1983. However, where watermelon farmers had initially prospered by cutting into the mainland's share of Hawaii's watermelon sales, the farmers' new success in growing the fruit has turned into a situation of oversupply. Also, prices this year are barely covering costs, leading to many fields being left unharvested, and some planned for conversion to other crops. Most recently, a pesticide problem involving only mainland watermelon has scared Hawaii consumers away from local produce.

The situation for other crops is more positive. In 1984, sweet potato production stood at 996,000 pounds, up 3 percent from the year before; sweet peppers at 465,000 pounds, up 86 percent; and green beans at 552,000 pounds were up 25 percent. Molokai's share of the state's vegetable production is increasing, with Molokai sweet potatoes accounting for 87 percent, peppers at 56 percent, and beans at 68 percent of Hawaii-grown produce.

Seed corn on Molokai is also experiencing a good year. After enduring a depressed market in 1984 due to federal incentives for farmers to reduce their planted acreages, the demand for seed corn has resumed at a remarkable level despite the mainland's ongoing droughts and the farm credit crisis. For Hawaiian Research and Holden's Foundation Seed Inc., the future looks promising, with 10 percent annual gains in sales projected for the near future. These related companies also provide a major contribution to Molokai's visitor industry by hosting about 200 scientists for three weeks every year who come to conduct breeding and other scientific experiments in the development of improved seed varieties.

Orca Sea Farms, located in the flatlands west and makai of Molokai Electric's new power plant, is in the process of constructing what will be 28 ocean-shrimp production ponds. Commercial production is expected by the end of the year. Orca will conduct its own marketing and distribution of the fresh frozen product, and is already test marketing its shrimp in California and Colorado.

Many of Molokai's diversified agricultural producers operate in Maui County's 305-acre agricultural park located in Hoolehua. 431 acres in 25- to 124-acre lots in the second phase will be ready for leasing next year. Relatedly, about 106 agricultural lots of up to 25 acres were awarded in May to Hawaiian homesteaders by the State Department of Hawaiian Home Lands.

Last year's drought and recent dryness has provoked speculation that expensive water pumping will be required this year, which may lead to an increase in water tariffs now set at 8 cents per 1,000 gallons of water compared to Maui's rate of 80 cents per 1,000 gallons. Daily outflow from the Kualapuu Reservoir has already been near the facility's capacity for several years. The biggest threat,

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however, lies in the growing domestic usage of water from the state's Molokai Irrigation System. About 500,000 gallons per day of water is being tapped for domestic use for the town of Kaunakakai until an independent and adequate water supply can be developed. Also, Kaluakoi Corporation, developer of the Sheraton Molokai, already is using part of the system's pipeline to carry its water. Farmers fear that these domestic uses of the Molokai Irrigation System may eventually crowd out agriculture as demand increases or as water supplies dwindle during periods of drought. Another complication is that two-thirds of the irrigation system's water is earmarked for use by the Hawaiian homesteaders. Should the water requirements of homesteaders continue to grow, competition for water could intensify.

Aggressively lobbying for the first time this year, the Molokai Farm Bureau won major victories at the 1984 legislative session. One was a $154,000 appropriation to develop an agricultural experiment station on Molokai to research crops and agricultural practices especially suited to Molokai's unique climate. The other was an appropriation to enable construction of a $400,000 cooling plant that will enable farmers to stabilize their shipments of produce, allow for more regular crop harvesting, and encourage the growing of profitable but more perishable fruits and vegetables that could benefit from cool storage.

The visitor industry on Molokai saw an estimated 4,170 overnight and longer visitors in 1984. From all indications, it appears that the brunt of the United Airlines strike spared Molokai because of business from local residents and returning visitors.

Destination Molokai, a volunteer visitor promotional organization, is continuing to boost Molokai's image as "The Old Hawaii," a place for visitors to find restful seclusion from the tensions of modern life. The organization is engaging in cooperative advertising with United Airlines, participating in mainland U.S. and Pacific Basin travel industry conventions, and organizing activities with Honolulu and Maui travel agents to help local residents become better acquainted with what the island has to offer. The success of this effort can be seen in Sheraton Molokai's April announcement that it had attained a 100-percent occupancy rate for the first time.

MAUI

THE VISITOR INDUSTRY

Last year, Maui County's visitor arrivals hit a new high of 1.8 million westbound visitors, representing a very robust growth rate of 9 percent. Trends in the industry were pointing to another great year, but the United Airlines strike in May evaporated those hopes. Through April, Maui's visitor arrivals were running 8 percent higher than last year, but the mid-May strike cut the cumulative growth rate by more than half to 3.5 percent.

It is more difficult to perceive the strike's impact on Maui's hotel occupancy rates. Occupancies through April of this year were healthy, ranging from a high of 96 percent in February to 84 percent in January and April. May's occupancy of 77 percent was significantly lower than the trend, but not unusually so since May is a seasonally slower month for Maui hotels. With June being another seasonally slow period, it may take several more months before the strike's impact on hotels becomes visible.

The strike's impact was clearly devastating for Maui's large visitor condominium market, however, which now comprises 58 percent of available accommodations. Occupancies for condominiums in the Kahana area of West Maui dropped 15 to 20 percentage points. The outlook for recovery appears hopeful, however, with full occupancies expected by the end of the year.

By fortuitous timing, the Kapalua Bay Hotel closed six days after the onset of the strike for scheduled renovations with reopening set for early July. Prior to the strike, Kapalua had enjoyed the best first quarter in its history, with occupancies above 90 percent. Judging by the strength of advance bookings, recovery is expected to come by the fourth quarter.

The upscale resort area of Kaanapali also appears to have weathered the strike with little damage. Occupancies since January have remained above 90 percent for most hotels, with June promising a slight dip to the lower 80's. Reasons for this strong showing include the increasing mix of affluent, independent travelers at Kaanapali, as opposed to organized tour groups, and a rising average length of stay, now at about five days.

Ongoing at Kaanapali is the development of the Hawaiian Sea Village project, which promises to be a unique, living cultural center displaying the lifestyle, cultural practices, and artifacts of ancient Hawaii prior to European contact. Patterned after the historical displays of Williamsburg, Virginia, the project is estimated to cost over $4 million, and will utilize a 22-acre site across from the Marriott and Hyatt Regency hotels. The project has received approval from the Maui Planning Commission, and is under review by the Maui County Council.

Also in process at Kaanapali is the renovation of the Maui Surf, which will feature a huge atrium entrance complete with a 20-foot high waterfall and an immense swimming pool skirting a five-story high island topped by an elegant villa. This project also awaits council review.

At the southern end of the island, Wailea enjoyed a healthy stream of business in 1984. The resort had hoped to turn in a banner year, but, occupancies plunged after the UAL strike. Fortunately, business has returned quickly, and higher than expected sales of Wailea's single-family lots with price tags in the quarter-million dollar range have helped to soften the strike's blow.

Further down the road, Seibu Hawaii's 310-unit Maui Prince Hotel is continuing construction after being stalled by the recent construction worker strikes. Originally slated for completion later this year, opening of the luxury hotel has been delayed to mid-1986. About 250 to 300 employees are planned to service the hotel and its three restaurants and manicured Japanese landscaping. Next on the construction agenda are a tennis complex and the expansion of its golf course. The master plan for Seibu's property calls for a second hotel and the construction of apartments and condominiums to bring the total resort to 3,500 to 4,000 units.

On Maui's eastern tip, the Hotel Hana-Maui is undergoing a $16-million, 16-month renovation. During the project, the 80-room hotel will remain open. The work will remedy the termite damage to the cottages, and is expected to improve the hotel's sagging occupancy rate, which was less than 55 percent last year.

SUGAR

Sugar production on Maui, showing the damage caused by last year's drought was down 18 percent through May. This is an additional blow to the industry, which last year saw its farm sugar value fall 1.2 percent despite increased production. Maui's employment in the sugar industry is also continuing its decline after peaking in 1981 at 1,450 field jobs, and may fall below 1,200 by the close of this year.

At Alexander & Baldwin's Hawaiian Commercial & Sugar Company, Maui's largest sugar plantation at 36,000

acres, total production is expected to fall 4 percent from last year to 214,000 tons. Crop yields are remaining at about 13 tons of sugar per acre, due to the extensive use of drip irrigation.

Second in size is Amfac's Pioneer Mill in Lahaina, where 55,000 tons of sugar was produced last year at a record 14.5 tons per acre. Because of the drought, yields are expected to drop to about 13 tons per acre. Employment at the plantation is down to 422, with further declines in manpower requirements expected through job combination and mechanization of cane cutting for replanting.

At C. Brewer's Wailuku Sugar Company, sugar production is expected to retreat 3 percent to 20,600 tons, with yields forecast at about 12.5 tons per acre. The company is continuing its cost-cutting efforts by encouraging early retirement, using layoffs during slow periods, and minimizing the expensive pumping of water for its fields.

Wailuku Sugar is planning to convert another 140 acres of its sugarcane land to macadamia orchards, boosting its macadamia acreage above 1,800 acres. About 130,000 pounds of nuts will be harvested this year, a year ahead of schedule. The company has high hopes for its macadamia orchards, in part because the nuts have a low moisture content and a 97-percent rate of useble kernels.

PINEAPPLE

Pineapple production in Maui County is of great importance, accounting for about 70 percent of the state's pineapple production. Pineapple sales fell 6 percent in 1984 after a record $45 million in 1983.

Pineapple is also a major crop on each of the county's main islands. Last year, an unusually large fresh pineapple supply depressed farm prices. On Molokai, Del Monte's 1,000-acre pineapple plantation harvested only the top 40 percent of its crop for the fresh fruit market because the remainder was uneconomical to process for juice. Current forecasts are that 7,500 tons of fruit will be harvested this year, stimulating a gain in employment from 80 in 1984 to 120 in 1985. The harvest is expected to increase in future years as newly planted fields mature, eventually doubling output to 15,000 tons annually.

On the Island of Maui, Maui Land & Pineapple Company enjoyed a 6-percent gain up to $74 million in revenues last year from sales of its private-label canned pineapple and restaurant and institutional sales. The 1984 drought will crimp production this year despite the company's great investment in irrigation and water distribution systems. This, combined with heightened foreign competition, has produced lowered production and sales targets for 1985.

Castle & Cooke's Lanai plantation is expecting lower pineapple production this year compared to 1984 because of past reductions in pine acreage. Now under new ownership, Castle & Cooke has announced its intention to expand Lanai's pineapple and tourism sectors. The company wants to build a pineapple juice concentrate plant on the island, and has prepared plans for a 400-room hotel in the Manele-Hulopoe Bay area, as well as a 250-room hotel in Koele, near Lanai City. The plans, which were submitted to the Maui Planning Commission in early 1984, also call for residential construction in both areas.

DIVERSIFIED AGRICULTURE

Many of Maui's vegetable farmers have been getting better prices for their produce thanks to the Maui Farmers Exchange, a marketing cooperative. Now primarily involved in the marketing of head cabbage, head lettuce, ginger, broccoli, and cauliflowers, the Exchange handles farm sales of about $5 million per year, spread about equally between the markets of Honolulu and Maui.

In its operation, the cooperative collects the planting and production plans of its member farmers, then meets with the major food wholesalers to set agreeable volume and price agreements for the various types of produce. In this way, the organization helps farmers receive a fair price for their product, while helping wholesalers obtain a steady supply of quality produce. Farmers are also persuaded to time their production levels according to market conditions.

Up at Kula, Controlled Environmental Farming's high-tech greenhouse operation anticipates growing half a million pounds of produce this year, the majority in tomatoes with the rest comprising cucumbers and head lettuce. New greenhouses on Oahu and Kauai are to be established by the end of this year. To market the abundant harvest, CEF plans to experiment with its own Maui retail outlets.

The Protea Cooperative of Hawaii is anticipating an increase in sales of 30 percent in 1985, the best since 1981. To complement its heavy winter and spring protea sales, the Protea Cooperative has begun to market tropical plants to become a "one-stop" source for ornamental plants and maintain a consistent level of sales year-round.

Hawaiian Foliage and Landscaping at Maalaea is also enjoying a good year with sales expected to reach $3.6 million this year.

An aquaculture functional plan that sets forth the goals, constraints, and possible revenues from such operations is scheduled for release later this year from Maui County. The county is also forging ahead on a baitfish project at Maalaea. When fully operational next summer, it will be the only baitfish supplier in the state, and may help to attract West Coast albacore fishing vessels to port in Maui to restock their supply.

CONSTRUCTION AND REAL ESTATE

Construction-put-in-place through May is running at $22 million, down 14 percent from 1984. The bright spot this year is in government construction contracts, which through May are up 90 percent from 1984 to $2 million. The big boost has come from county construction projects, which skyrocketed 150 percent above 1984. Under construction now is the new $8 million police station in Wailuku, and a new state circuit court building. Also, a third water well jointly funded by Wailea, Seibu, C. Brewer, and the county to serve the Kihei-Makena area is nearing completion.

Lackluster activity in the building industry seems to have extended to the real estate market. This year, the condominium market has been down 2 and 3 percent in the number and price of resales, respectively. Even the single-family market is now showing signs of price weakening in resales this year, down a percentage point through May at $153,333. What condominium construction is still occurring seems to show an emphasis on units that are smaller than the 2- and 3-bedroom units built in years past.

The county is continuing work on several affordable housing projects, with the 88-unit Luana Gardens in Kahului, the 71 lots at Hale Noho in Napili, and the 207-lot subdivision named Skill Village in Paia still under construction.

TRANSPORTATION

Work on the long-awaited expansion of Kahului Airport is slated for this October beginning with the relocation of the commuter terminal and airfield. The major work, however, will begin next year with the construction of new aircraft parking areas and a new terminal building. The

1985 Legislature appropriated $34 million in construction money for the new facility, which should better accommodate the flood of visitors from the recently inaugurated direct flights to the mainland.

A new airstrip for West Maui at Mahinahina is also moving ahead, and is under review by the Maui County Council. Action on the Hawaiian Airlines proposal may come by the end of this summer. If approved and constructed by 1986 as planned, the facility is expected to accommodate 372,000 passengers the first year of operation, increasing to 750,000 passengers by 1995. The airstrip would help to ease the traffic bottleneck between West Maui and Kahului, and also assist West Maui resorts in reaching their full potential.

HIGH TECHNOLOGY INDUSTRIES

The Kihei Research and Technology Park advanced another step with its inclusion in the recently passed Kihei Community Plan. Tenants for two buildings of the park have tentatively been identified, and groundbreaking is hoped to begin at the end of the year.

Meanwhile, a "fast-track" subdivision and building permit ordinance for the Kihei park is under review by the Maui County Council. The ordinance proposes strict pollution and other controls on the type and operation of firms locating in the park. In turn, the ordinance would assure interested firms that county action would be taken on their application within 90 days.

Up at Haleakala Crater, the U.S. Air Force's Maui Optical Station is continuing its research relating to the Reagan Strategic Defense Initiative or "Star Wars" plan. The station made recent headlines by bouncing its laser off a mirror held in the window of the orbiting space shuttle. It is also reportedly embarking on a joint project with Kauai's Barking Sands Missile Range to bounce the laser off rockets fired from Kauai.

At the University of Hawaii's Haleakala observatory, measurements of the distance from the earth to the moon are now accurate to within 2 centimeters. This astounding level of precision by the world's only operating laser lunar ranging facility will enable the monitoring of tectonic plate movements in the earth, and provide for the tracking of satellites with unprecedented accuracy.

Maui Electric Company (MECO) is studying the feasibility of constructing an energy grid connecting Maui, Molokai, and Lanai by an undersea power cable. Such a grid could cut energy costs on Molokai and Lanai, as well as make any future development of geothermal resources at Ulupalakua more attractive. Meanwhile, geothermal emissions are being monitored as part of the exploration of the Ulupalakua geothermal subzone.

At the sugar plantations where MECO obtains 10 percent of its electricity requirements, work is underway to increase the use of sugarcane waste materials to power steam-driven electrical generators. Co-generation equipment that could improve power plant efficiency and generate steam for use in pineapple canning is also under study at Maui Pine. In wind energy, MECO's 340-kwh wind turbine at Maalaea is back in operation after undergoing repairs in February. A wind farm with a capacity of up to 10 megawatts is expected to be in place mauka of Kapalua by the end of the year. Finally, wind energy to pump water for agriculture and for energy storage in reservoirs is also under investigation by MECO.

Maui County Statistics

	Unit	Period	1980	1981	1982	1983	1984	Jan.-May 1985	% change Jan.-May 1985/1984	% change Annual 1984/1983
Population, Resident	number	July 1	71,600	74,200	76,900	79,600	83,300	n.a.	n.a.	4.6
Per Capita Personal Income	dollars	total	9,144	9,778	10,598	10,963	n.a.	n.a.	n.a.	n.a.
Civilian Labor Force	number	mo. avg.	36,750	39,150	42,200	44,100	43,900	44,100	1.4	−0.5
Employment	number	mo. avg.	34,850	36,800	38,850	40,650	41,200	41,850	3.0	1.4
Unemployment	number	mo. avg.	1,900	2,350	3,350	3,450	2,700	2,250	−21.1	−21.7
Unemployment Rate	percent	mo. avg.	5.2	6.0	7.9	7.9	6.8	5.1	−21.5	−13.9
Total Job Count[1]	number	mo. avg.	34,050	35,350	36,850	38,150	38,900	39,150	6.4	2.0
Gross Business Receipts	mil. $	total	1,104.3	1,165.9	1,203.4	1,376.2	1,615.9	741.7	4.1	17.4
State Tax Collections[2]	thous. $	total	56,897	57,582	52,850	68,217	76,573	36,973	22.4	12.2
Visitor Expenditures	mil. $	total	400.6	429.4	540.3	792.9	1,078.3	n.a.	n.a.	36.0
Estimated Westbound Visitors	thous.	total	1,378.2	1,389.9	1,550.1	1,645.7	1,854.7	813.3	3.5	12.7
Hotel Inventory	number	June	10,483	11,245	12,278	12,680	13,336	14,152	7.7[3]	5.2
Hotel Occupancy	percent	mo. avg.	66.2	70.3	73.9	75.2	80.5	85.9	0.0	7.0
Private Permits	thous. $	total	253,689	147,813	90,702	91,249	59,841	n.a.	n.a.	−34.4
Residential Permits	thous. $	total	215,209	118,802	35,771	38,814	40,887	n.a.	n.a.	5.3
Non-Residential Permits	thous. $	total	38,480	29,011	54,931	52,435	18,954	n.a.	n.a.	−63.9
Public Contracts Awarded	thous. $	total	17,886	12,886	45 790	29,943	26,759	20,730	90.0	−10.6
Real Estate Resales										
Single-Family	number	total	189	148	103	185	201	102	18.6	8.6
Average Price	dollars	cum. avg.	169,191	181,889	134,86	155,095	175,494	153,333	−0.8	13.2
Condominium	number	total	372	240	282	381	386	169	−2.3	1.3
Average Price	dollars	cum. avg.	160,000	166,832	153,414	151,169	141,763	137,292	−2.9	−6.2
Sugar Production, raw sugar [4]	thous. tons	total	266	255	235	287	351	85	−18.4	22.3
Pineapple Sales, Fresh Equivalent	thous. $	total	36,404	39,915	38,602	45,099	42,200	n.a.	n.a.	−6.4
Diversified Crops and Livestock	thous. $	total	22,098	24,875	25,443	28,870	30,500	n.a.	n.a.	5.6
Diversified Crops[4]	thous. $	total	12,014	13,270	14,085	16,503	18,000	n.a.	n.a.	9.1
Livestock	thous. $	total	10,084	11,605	11,358	12,367	12,500	n.a.	n.a.	1.1

[1]Refers to number of jobs rather than number of persons employed. Persons with more than one job are counted more than once.

[2]Totals do not include real property taxes.

[3]Compares February, 1985 to February, 1984.

[4]Total crops excluding sugar and pineapple.

n.a. = not available

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